VOLUME 29 NUMBER 5

ARCHIVES
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MAY 1934

PUBLISHED MONTHLY BY THE AMERICAN MEDICAL ASSOCIATION
DEARBORN STREET, CHICAGO, ILLINOIS

Entered as Second-Class Matter, October 21, 1917, at the Postoffice at Chicago, Illinois, Under Act of Congress of March 3, 1879. Authorized for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917, authorized on June 28, 1918.

CONTENTS OF PRE[illegible] NUMBER

[illegible], 1936

[illegible]

[illegible]

[illegible]

Archives of Dermatology and Syphilology

VOLUME 29 MAY, 1934 NUMBER 5

ACETARSONE IN THE TREATMENT OF NEUROSYPHILIS

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During the last few years, acetarsone, chemically known as 3-acetylamino-4-hydroxyphenyl-1-arsonic acid, appears to have established a place among the prominent therapeutic agents in the treatment of syphilis. It has been more extensively used abroad than in this country. It is known also as stovarsol. The formula or preparation was developed by Ehrlich [1] in 1911. It is believed that he was not satisfied with the practical therapeutic value of the preparation because of its toxic reactions in experiments with mice. No further study of the compound was made until its reinvestigation by Fourneau [2] in 1921.

In 1922, Levaditi and Navarro-Martin [3] proved that acetarsone, injected subcutaneously in doses of from 0.1 to 0.2 Gm. per kilogram of body weight, has a curative action in experimental syphilis of the rabbit. In addition, Levaditi and Navarro-Martin [4] found that the oral administration of the preparation brings about the healing of syphilitic lesions in the rabbit and monkey. They also treated eighty patients with syphilis by the oral administration of 1 Gm. of acetarsone a day for seven days, and by repeated courses at weekly intervals until from 12 to 16 Gm. had been given. Thirty of the cases were in the primary stage, and the chancres were healed within a period of from five to fifteen days. In cases of secondary and tertiary stages, the lesions tended to disappear rapidly, but unfortunately relapses occurred in many instances. Other investigators, including Oppenheim,[5] reported

This thesis was submitted by L. H. G. to the Faculty of Dermatology-Syphilology of the University of Pennsylvania in partial fulfilment of the requirements for the degree of Master of Medical Science for graduate work in dermatology and syphilology.

1. Ehrlich, P., and Hata, S.: Experimentelle Chemotherapie der Spirillosen, Berlin, Julius Springer, 1910.
2. Fourneau, E.: Ann. Inst. Pasteur **35**:571, 1921
3. Levaditi, C., and Navarro-Martin, A.: Ann. Inst. Pasteur **36**:46, 1922.
4. Levaditi, C., and Navarro-Martin, A.: Ann. Inst. Pasteur **35**:729, 1922.
5. Oppenheim, M.: Die interne Behandlung der Syphilis mit Stovarsol oder Spirozid, Klin. Wchnschr. **6**:1291 (July 2) 1927.

similar favorable results, but all agreed that the oral administration of acetarsone is not so effective therapeutically as are the arsphenamines in the treatment of adult syphilis.

Acetarsone has been used to some extent in the prophylaxis of syphilis in adults. Oppenheim [6] expressed the belief that it is more effective than arsphenamine in this regard. It has apparently been of value in the treatment of amebic dysentery, pemphigus, yaws and a few other diseases, but on the whole acetarsone has not been employed in a sufficient number of cases to establish its true worth.

USE IN CONGENITAL SYPHILIS

During the last few years acetarsone has been employed extensively in the peroral treatment of congenital syphilis. The first successful use was reported in 1924, by Dupérié, Cadenaule and Clarac.[7] Since that time there have been numerous reports from clinics abroad as well as in this country. Recently, Abt and Traisman,[8] Maxwell and Glaser [9] and Rosenbaum [10] reported satisfactory clinical results in a comparatively large series of cases. These reports appear to have established the value of acetarsone in the treatment of congenital syphilis. A part of its popularity is due, without doubt, to the ease and convenience of administration, as compared with the intravenous or intramuscular method of other antisyphilitic preparations. In addition, all investigators have reported a relatively low toxicity.

USE IN DEMENTIA PARALYTICA

In 1929, Sézary and Barbé [11] reported the results of acetarsone administered by the intravenous method in the treatment of one hundred and twenty-five cases of dementia paralytica. The cases were not selected but were divided into three groups according to the clinical manifestations of the disease. In the final report, 68 per cent of the patients were much benefited by its use, 58 per cent being able to resume their previous occupations. Favorable improvement was shown in about 58 per

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6. Oppenheim, M.: Die Indikationen des Stovarsol (Spirocid) bei der Behandlung der Lues, Wien. med. Wchnschr. **76**:918, 1926.

7. Dupérié, R.; Cadenaule, P., and Clarac: J. de méd. de Bordeaux **45**:456 (July 20) 1924.

8. Abt, A. F., and Traisman, A. S.: Stovarsol in the Peroral Treatment of Congenital Syphilis, J. Pediat. **1**:172 (Aug.) 1932.

9. Maxwell, C. H., and Glaser, J.: Treatment of Congenital Syphilis with Acetarsone (Stovarsol) Given by Mouth, Am. J. Dis. Child. **43**:1461 (June) 1932.

10. Rosenbaum, H. A.: Stovarsol in the Treatment of Syphilis in Infants and in Children, Am. J. Dis. Child. **44**:25 (July) 1932.

11. Sézary, A., and Barbé, A.: Résultats cliniques et biologiques de la stovarsol thérapie, Presse méd. **37**:1 (Jan. 2) 1929.

cent of those exhibiting mental deficiency. About 26 per cent of the patients in the advanced stage of the disease, that of dementia, were improved. Malarial therapy had previously produced no change in these patients. From the laboratory point of view, the reversal to a negative serologic condition of the spinal fluid was noted in 34 per cent of the cases. In a later report, published in September, 1931, Sézary [12] stated that the number of patients treated with acetarsone had reached three hundred. The satisfactory clinical results had continued.

EXPERIMENTAL RESULTS IN ANIMALS

Raiziss and Severac [13] injected Spirochaeta pallida into the spinal canal of rabbits. After two hours the rabbits were given an intravenous injection of alkalinized acetarsone. Later it was proved that the infection did not spread to the testicles as is usual when the infection is not checked. The animals showed no evidence of syphilis in an asymptomatic form. Horster [14] treated mice infected with syphilis by subcutaneous injections of acetarsone. Contrary to the usual finding of extension of the infection to the brain, the examination of the brain tissue revealed no abnormalities. The experiments suggest that acetarsone possesses the property of destroying the spirochetes of syphilis in the central nervous system.

TOXICOLOGY AND PHARMACOLOGY

There have been varying reports as to the toxicity of acetarsone. The question is of major importance in the clinical evaluation of the drug. As aforementioned, most writers have noted a relatively low toxicity from its use in cases of congenital syphilis, and usually the toxic symptoms were not of serious consequence on the cessation of its administration.

Raiziss and Severac [15] showed that there is a marked variation in the toxicity of acetarsone of different manufacturers. These writers expressed the belief that the drug becomes less toxic as it approaches the point of chemical purity. Obviously, the result is a greater margin of safety between the therapeutic and toxic doses.

Acetarsone is a pentavalent arsenical and is crystalline. Arsphenamine belongs in the trivalent group and is a semicolloidal substance.

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12. Sézary, A.: Le traitement de la paralysie générale par les injections de stovarsol, Presse méd. **77**:1423 (Sept. 20) 1931.

13. Raiziss, G. W., and Severac, M.: Chemotherapeutic Studies of Acetarsone (Stovarsol), Arch. Dermat. & Syph. **25**:799 (May) 1932.

14. Horster, H.: Med. Klin. **17**:511, 1921.

15. Raiziss, G. W., and Severac, M.: Toxicity of Acetarsone (Stovarsol), J. Chemotherapy **7**:1 (April) 1930.

Tryparsamide belongs in the pentavalent group, and it is believed that, because of its character, it has less difficulty in penetrating and diffusing into the tissues of the central nervous system. It is assumed, therefore, that acetarsone has a like ability. Moreover, it is believed that acetarsone is a more effective spirocheticidal drug, and that this property should enhance its therapeutic activity in syphilis of the central nervous system.[16]

Acetarsone is a white, odorless powder and is soluble in alkaline solution. It contains about 27 per cent of arsenic, while neoarsphenamine contains 20 per cent and arsphenamine 32 per cent. It was accepted by the Council of Pharmacy and Chemistry of the American Medical Association and listed in "New and Nonofficial Remedies" in 1926.[17]

DOSAGE

In general, in cases of congenital syphilis, acetarsone has been dispensed in the form of tablets of 0.25 Gm. The usual initial dose has been 0.005 Gm. per kilogram of body weight, the dosage being increased gradually at weekly intervals unless toxic symptoms appeared. The total dosage during a single course has averaged about 20 Gm. In many cases, several such courses have been given at intervals of six weeks.

In the treatment of syphilis in the adult, the average dose of acetarsone has been 1 Gm. a day for seven days, followed by a period of rest for one week. Many courses of this nature were repeated.

Sézary,[18] in a series of cases of dementia paralytica administered acetarsone intravenously in the form of a solution of its sodium salt. The average single dose was 1 Gm., given three times a week, for a period of from seven to eight weeks. Several such courses were given, separated by rest periods of about one month each. Sézary later changed the form of administration to the subcutaneous method, hoping to eliminate the hazard of impairment of the optic nerves. It is well known that tryparsamide, as well as all pentavalent arsenicals, is capable of injury to the optic nerve. In a series of three hundred patients treated subcutaneously, Sézary found no evidence of impairment of the optic nerve as a result of the treatment.

The following group of cases was selected in an attempt to appraise the clinical value of acetarsone in the treatment of neurosyphilis. All of the cases showed abnormal changes in the spinal fluid. The lumbar or cisternal puncture was performed as near as possible to the time of

16. Garner, V. C., and Stokes, J. H.: Treatment of Early or Acute Syphilis, M. J. & Rec. **134**:369 (Oct. 21) 1931.

17. New and Nonofficial Remedies, Chicago, American Medical Association, 1926, p. 81.

18. Sézary and Barbé[11] and Sézary.[12]

instituting the treatment. A Wassermann test of the blood was taken as part of the routine. Each patient was given a complete physical examination, and observations were recorded. Prior to treatment each patient was referred to the department of ophthalmology to have an examination made of the eyegrounds, especially the visual fields. Patients with optic atrophy were rejected.

The preparation of sodium acetarsone used in this series was in powder form, in ampules of 1 Gm. each. The amount contained in the ampule was dissolved in 9 cc. of normal (4 per cent) sodium hydroxide to which was added 11 cc. of sterile distilled water. Each dose was then tested with red litmus paper to make certain that it was alkaline before administration. The initial dose was always 0.5 Gm., and the second dose was usually 1 Gm. This amount was repeated once a week. The intravenous method was employed in all cases. The total dosage varied from 8 to 20 Gm.

Each patient was cautioned to be alert to dimness or change in vision. Other toxic symptoms were carefully noted.

The diagnosis, observations as to clinical and laboratory examinations and the amount and type of previous antisyphilitic treatment are noted in the history of each case. The reports of six cases are given.

REPORT OF CASES

CASE 1.—C. M., a white woman, aged 25, had a condition which was diagnosed as asymptomatic neurosyphilis. She came to the clinic in September, 1931. The diagnosis at that time was secondary syphilis with a maculopapular eruption of the skin. The Wassermann reaction of the blood was strongly positive. Treatment was begun with neoarsphenamine, 0.45 Gm. weekly. After twelve injections of the drug, followed by sixteen intramuscular injections of a bismuth compound, the Kolmer and Kahn tests of the blood were negative. Similar treatment was continued but rather intermittently, and in September, 1932, the Wassermann reaction had become strongly positive. In November, 1932, a lumbar puncture was performed with the following results: cell count, 267; sugar, positive; globulin, markedly increased; colloidal gold, 4445321000; Wassermann reaction of the spinal fluid, strongly positive (4442).

Treatment with acetarsone administered intravenously was instituted at this time. After a course of injections of 18 Gm. each, the tests of the blood were repeated, with the following results: Kolmer test, doubtfully positive; Kahn test, weakly positive. A report of the lumbar puncture was as follows: cell count, 3; test for sugar, positive; test for globulin, negative; colloidal gold, 0000000000; Wassermann reaction of the spinal fluid, doubtfully positive.

CASE 2.—C. F., a white man, aged 37, presented a condition which was diagnosed as probable early dementia paralytica. The patient came to the clinic with the report of a positive Wassermann reaction of the blood discovered during a routine physical examination. There was no complaint. Physical examination was negative except for a slight increase of patellar reflexes and a sluggish light reflex of the pupils. There was a history of a penile lesion twenty-five years before and of treatment with local destruction and a course of internal medication with pills.

On Nov. 8, 1932, the Kolmer test was strongly positive, 442; the Kahn test, 443. Examination of the spinal fluid showed: cell count, 33; test for sugar, positive; globulin, moderately increased; colloidal gold, 5555430000; Wassermann reaction, strongly positive (4431).

After a course of 19 Gm. of acetarsone injected intravenously, the examinations of the blood and spinal fluid were repeated. The Kolmer test was strongly positive; the Kahn test, 333. Examination of the spinal fluid revealed; cell count, 2; test for sugar, positive; test for globulin, negative; colloidal gold, 3533210000; Wassermann reaction, strongly positive (4442).

Case 3.—A. G., a white man, aged 50, presented a condition which was diagnosed as asymptomatic neurosyphilis. The patient was referred from the department of ophthalmology with the report that the Kolmer and Kahn tests were strongly positive. There were no complaints, and the neurologic examination gave negative results except for sluggish reaction of the pupils to light and deviation of the tongue to the right. There was a history of thirty intramuscular injections of bismuth.

On Feb. 6, 1933, the tests of the blood were the same as before. Examination of the spinal fluid gave the following results: cells, none; test for sugar, positive; test for globulin, faint trace; test for colloidal gold, negative; Wassermann reaction, strongly positive.

After a course of 12.5 Gm. of acetarsone, injected intravenously, the examinations of the blood and spinal fluid were repeated, with the following results: Kolmer test, moderately positive; Kahn test, moderately positive; spinal fluid, cell count, 2; sugar, positive; colloidal gold test, negative; Wassermann reaction, negative.

Case 4.—E. R., a white woman, aged 50, presented a condition which was diagnosed as tabes dorsalis. The patient had been receiving antisyphilitic treatment, irregularly during the six years before admission. In July, 1927, the Kolmer test of the blood was moderately positive; the Kahn test, strongly positive. Examination of the spinal fluid at that time gave negative results except for a moderately positive Wassermann reaction.

In February, 1933, the patient reappeared at the clinic, complaining of radiating pains about the lower part of the back and thighs. The Kolmer and Kahn tests of the blood were negative. The report on the spinal fluid was negative except for a weakly positive Wassermann reaction.

After 11 Gm. of acetarsone had been administered intravenously, the blood and spinal fluid were again examined, with negative results.

Case 5.—N. M., a colored man, aged 48, presented a condition which was diagnosed as tabes dorsalis. He came to the clinic in January, 1932, complaining of pains in the legs, loss of sexual power and disturbance of the bladder. The Kolmer test of the blood was strongly positive, and the Kahn test, weakly positive. There had been no previous antisyphilitic treatment. Injections of bismuth were ordered, and the patient received thirty intramuscular treatments. In December, 1932, the spinal fluid was examined; the report was: cell count, 1; sugar, positive; globulin, negative; colloidal gold test, negative; Wassermann reaction, moderately positive.

The patient received 16.5 Gm. of acetarsone intravenously, and the blood and spinal fluid were again examined. The Kolmer and Kahn tests of the blood were negative. Examination of the spinal fluid gave negative results except for a weakly positive Wassermann reaction.

CASE 6.—J. R., a colored man, aged 55, presented a condition which was diagnosed as asymptomatic neurosyphilis. He came to the clinic in January, 1930, complaining of pains in the legs and numbness of the feet. There was a history of a primary lesion on the penis in 1912, but he had received no treatment. The Kolmer test of the blood at that time was moderately positive and the Kahn test positive. Following this the patient received forty-three injections of bismuth and thirteen injections of 0.45 Gm. of neoarsphenamine.

In January, 1933, the Wassermann reaction of the blood was strongly positive. The examination of the spinal fluid showed: cell count, many red cells (from faulty technic); sugar, positive; globulin, increased; colloidal gold, 2532310000; Wassermann reaction, moderately positive. After 13.5 Gm. of acetarsone had been injected intravenously, the blood and spinal fluid were again examined. The Kolmer test of the blood was negative and the Kahn test, weakly positive. Examination of the spinal fluid revealed: cell count, 1; sugar, positive; colloidal gold, 4555310000; Wassermann reaction, moderately positive.

TOXIC SYMPTOMS AS A RESULT OF ACETARSONE THERAPY

Among the seventeen neurosyphilitic patients who received treatment, dimness of vision developed in one, following the fourth injection. The case was one of tabes dorsalis of several years' duration. The vision became normal within a few days after the cessation of treatment. Two patients complained of nausea and diarrhea following the first few injections. This was eliminated after the restriction of the diet of the patients immediately before and after receiving treatment. One patient received an injection of 1 Gm. of acetarsone that had not been dissolved in the prescribed amount of sodium hydroxide solution. During the injection he complained of severe nausea and suddenly became unconscious, but revived quickly. Subsequent injections did not cause a disturbance, but the one reaction showed that it was safest to test each dose with the red litmus paper to be sure that the solution was alkaline. No other toxic reactions were noted.

SUMMARY

1. Intravenous injections of acetarsone were given to seventeen patients, all of whom showed symptoms of neurosyphilis from a clinical or laboratory point of view.

2. Most of the patients improved subjectively, i. e., obtained relief from the radiating pains.

3. The drug seemed to have a tonic effect. One patient gained 15 pounds (6.8 Kg.).

4. In most cases, as cited in the detailed reports, the condition of the spinal fluid was improved.

5. Reports of a favorable action on the Wassermann and Kahn tests of the blood were noted in some of the cases.

6. In two patients with very small veins, occasionally a small part of the dose was given extravenously with no untoward symptoms.

CONCLUSIONS

Acetarsone is worthy of further trial in the treatment of neurosyphilis. In this series of cases, it has been shown to be of definite therapeutic value. A better evaluation of the preparation can be determined with a greater series of cases and with longer courses of treatment.

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KAHN REACTION WITH SPINAL FLUIDS CONTAINING VARYING AMOUNTS OF SYPHILITIC BLOOD

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This article deals with the question of the accuracy of serologic tests of spinal fluids that are tinged with blood. Any one who has performed many lumbar punctures has had his share of "bloody taps." All of us, no doubt, have frequently questioned the reliability of the report from the laboratory on serologic reactions in such cases. In our own clinic the occasional lack of agreement of serologic reactions with some of the clinical findings as well as the occasional lack of uniformity of the reactions to the Kahn test of the cerebrospinal fluid from week to week has led us to investigate this matter more thoroughly.

Kafka [1] was one of the first to emphasize the importance of contamination of the spinal fluid with blood. He advised that the amount of blood in the specimen be estimated and added to a known normal cerebrospinal fluid, and the result noted. If the negative reaction of the spinal fluid was unchanged by the addition of this blood, he reasoned that the particular serologic reaction reported could be relied on.

Stalder [2] carried out further investigations along these lines, but found no uniformity in the reactions. Cases that were similar with regard to the stage of the syphilis and the amount of treatment showed different reactions. He believed that Kafka's suggestion was unreliable because of the lack of uniformity of his results, and he concluded that if the cerebrospinal fluid gave a negative reaction, the serologic report could be accepted, but that if the reaction was positive and if the cerebrospinal fluid had been contaminated with blood, another lumbar puncture should be done. Both of the aforementioned investigators employed a complement fixation test.

Studies and contributions of the Departments of Dermatology and Syphilology, and the Central Laboratory, University of Michigan Medical School, services of Dr. Udo J. Wile and Dr. Reuben L. Kahn, respectively.

1. Kafka, V.: Wassermann'schen Reaktion und blutiger Liquor, in Jadassohn, J.: Handbuch der Haut- und Geschlechtskrankheiten, Berlin, Julius Springer, 1930, vol. 17, part 1, p. 513.

2. Stalder, W., and Strehler, W.: Experimentelle Studien über die Beurteilung der Wassermann'schen Reaktion des bluthaltigen Liquors, Schweiz. med. Wchnschr. **33**:752 (Aug. 13) 1932.

EXPERIMENTAL DATA

Our general plan was to add varying amounts of serum with a positive reaction to spinal fluids known to give negative serologic reactions and to perform Kahn tests with the latter in order to determine the smallest amount of serum necessary to produce a positive reaction in the fluid. In view of the fact that serums from syphilitic patients show marked variation in their serologic potency it was thought advisable to establish quantitatively the number of serologic units of each serum before adding a given amount of it to the spinal fluid.

The cases selected for this study were taken from the Department of Dermatology of the University of Michigan Hospital. Two clinical groups were used, one composed of patients who were known to be syphilitic, and one of non-syphilitic subjects. No separation as to type of syphilis or amount of treatment was employed. Thus our cases represented all the types including some hereditary syphilis.

The steps involved in carrying out the study were as follows: (1) examination and selection of the spinal fluids giving negative reactions to the Kahn test; (2) examination of serums giving positive reactions to the Kahn test; (3) quantitative examinations of these serums to determine their serologic potency; (4) addition of varying amounts of serum to definite quantities of spinal fluid with the determination of the reaction to the Kahn test.

As the usual technic was employed in making the standard Kahn test, this will not be described in detail. The following quantitative procedure was employed: In determining the number of Kahn units, a series of dilutions of syphilitic serum with physiologic solution of sodium chloride—1 to 5, 1 to 10, 1 to 20, 1 to 30, etc.—was made and 0.15 cc. of each dilution mixed with 0.01 cc. of standard antigen suspension. After the dilutions had been shaken for three minutes 0.5 cc. of saline solution was added to each tube, and the highest dilution showing a postive reaction (++ or more) multiplied by 4 was taken as the number of units of the serum.

In this experiment, serums giving 4 plus reactions to the Kahn test were diluted as indicated by the quantitative determinations on each serum, and portions of these dilutions were added to spinal fluids with a negative reaction. Four amounts of each dilution—0.05, 0.1, 0.15 and 0.2 cc.—were added, respectively, to 1.45, 1.4, 1.35 and 1.3 cc. of spinal fluid with a negative reaction giving a final volume of 1.5 cc. To each tube 1.5 cc. of saturated solution of ammonium sulphate was added, and the mixtures were well shaken. Incubation for fifteen minutes at 56 C. followed, and then centrifugation at a high rate of speed for fifteen minutes. This packed the globulin in the bottom of the tubes, making possible the complete removal of the supernatant fluid. The globulin was then redissolved in 0.15 cc. of saline solution which was pipetted into tubes containing 0.01 cc. of Kahn antigen suspension; the mixture was shaken for four minutes; 0.5 cc. of saline solution was added and the presence or absence of precipitate recorded.

One hundred serums from patients with syphilis were tested in this manner, and in each case the tubes containing 0.15 cc. of the diluted serum plus 1.35 cc. of spinal fluid with a negative reaction as well as those containing 0.2 cc. of the diluted serum and 1.3 cc. of spinal fluid with a negative reaction gave positive reactions (++ or more), while the tubes containing 0.05 and 0.1 cc. plus 1.45 cc. and 1.4 cc., respectively, gave weakly positive (+ or ±) or negative reactions.

Assuming that one drop is equivalent to 0.05 cc. and that whole blood is one-half serum and one-half cells, the following table was compiled. The average amount of spinal fluid employed was 6 cc., and these figures were computed on the basis of that amount.

It was thought that products of hemolysis might conceivably have some bearing on the results obtained even though the amount of lysis was usually insufficient to discolor the spinal fluid. Blood cells from twenty-two syphilitic and twenty-six nonsyphilitic patients were washed three times with saline solution to remove all traces of serum, lysed in distilled water and centrifugated to remove all débris of cells, and the clear fluid added to spinal fluids with a negative reaction in proportions equivalent to from 0.1 to 2 drops of whole blood in 1.5 cc. The fluids—most of them highly discolored—were tested in the usual manner and found to give uniformly negative reactions.

Amount of Blood with a Positive Reaction to Serologic Tests Required to Change the Reaction of Spinal Fluid (6 cc. Quantity) to the Kahn Test from Negative to Positive

Number of Serums Tested	Potency of Serums Expressed in Kahn Units	Amount of Whole Blood Necessary to Change Negative to Positive Reaction	
		In Cc.	In Drops
10	4	0.4	8
10	20	0.24	5
10	40	0.22	2½
10	80	0.06	1¼
10	120	0.04	⅘
7	160	0.03	⅗
10	200	0.024	½
5	240	0.020	⅖
1	280	0.017	⅓
1	320	0.015	— ⅓
3	360	0.013	+ ¼
9	400	0.012	— ¼
1	560	0.008	⅛
2	800	0.006	⅛
5	1,200	0.004	1/12
2	1,280	0.0038	1/12
1	1,440	0.0032	1/15
2	1,600	0.0030	1/16
1	2,600	0.0018	1/28

COMMENT

When an attempt is made to analyze these data, it appears that in spinal fluids contaminated with blood lies the answer to the original problem which confronted us, namely, the occasional nonuniformity of serologic and clinical findings as well as the occasional variation in reactions of spinal fluid from week to week. As is evident from the data, as little as one twenty-eighth drop of whole blood can change a spinal fluid previously known to give a negative reaction to one with a positive reaction. Obviously, therefore, spinal fluids contaminated with blood offer an important problem to the syphilologist.

Since these investigations were undertaken we have had occasion to review some of our records, and found a few patients with clinically borderline cases who were treated for syphilis of the central nervous system because of the additional evidence of a positive Kahn reaction

of the cerebrospinal fluid. Within a week or two following treatment, these fluids gave negative reactions and have continued to do so. On checking the original report on the spinal fluid, we discovered that the serologist had reported the fluids to be contaminated with blood—the importance of which had been underestimated at that time. Happily such cases are rare, but they are of great importance.

Our investigations explain the varying results obtained by Stalder. Obviously we cannot expect the same quantity of different serums with a 4 plus reaction to change the reactions of spinal fluid, since one serum with a 4 plus reaction may be one hundred times as potent as the other, as shown by the quantitative Kahn reaction. Our findings indicate that all bloods with the same serologic potency require the same amounts to be added to spinal fluids with a negative reaction to change the reaction to positive.

Obviously, the examination of the spinal fluid should be repeated whenever a "bloody tap" is obtained. We presume that it is theoretically possible to determine the approximate amount of blood serum in a tinged fluid and, on the basis of this calculation, to establish the dependability of the positive reaction. In practice, however, this would entail difficulties, and, in our opinion, the repetition of the examination would seem more desirable.

SUMMARY

In order to determine the effect on the Kahn reaction of the presence of syphilitic blood in spinal fluid with a negative reaction one hundred blood serums of patients with syphilis were added in various amounts to spinal fluids known to give a negative reaction. The exact amount of serum necessary to convert these spinal fluids to positively reacting fluids was then determined. The results in our cases varied from as much as 8 drops to as little as one twenty-eighth drop, this variation depending on the potency of the syphilitic blood as measured by the quantitative Kahn reaction.

In order to ascertain whether any product of hemolysis affected the serum of the spinal fluid, the blood of twenty-two syphilitic and twenty-six nonsyphilitic patients was collected. The serum was removed with saline solution, the cells were lysed in distilled water, and the cellular débris was removed by centrifugation; after this the hemolyzed fluid was added to spinal fluids known to give a negative reaction. The fluids were tested in the usual manner and gave uniformly negative results.

CONCLUSION

1. The Kahn test as performed on spinal fluids is a highly sensitive one, capable of detecting as little as one twenty-eighth drop of syphilitic blood in 6 cc. of spinal fluid.

2. If the Kahn test of the cerebrospinal fluid is positive and the fluid has been contaminated with blood, another lumbar puncture should be done.

3. Whatever is responsible for the serologic change in spinal fluid contaminated with blood is present in the blood serum and not in the red blood cells.

RATTLESNAKE ANAPHYLAXIS ASSOCIATED WITH A GENERALIZED DERMATITIS

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Herpetologic and medical literature abounds with articles on rattlesnake bite. It has been considered from practically every standpoint. Alexander [1] Anderson,[2] Braddock,[3] Blackwood [4] and Hanley [5] ably presented this subject, emphasizing especially the toxic effect of the venom when it is injected into human beings. Zozaya and Stadelman [6] were the first to present a case of anaphylactic dermatitis due directly to snake venom or to emanations from poisonous reptiles. Jackson, Duke, Piness, Rowe and others reported cases of anaphylactic dermatitis, but none recorded dermatitis following rattlesnake bite. Duke dealt especially with the bites of venomous insects, such as bee stings, and considered them and the effect of their poison injected into man from the standpoint of anaphylaxis.

A colleague of mine attempted to cut down a hollow tree in which a swarm of yellow-jackets had their nest. They stung him in many places, especially around the head and face. In a few moments he had a typical case of serum sickness, with a high temperature, urticarial rash and collapse—all the symptoms of anaphylactic shock. Apparently my friend had been sensitized to insect venom. He gave a history of a previous experience similar to the one related, which had apparently made him anaphylactic.

Read before the California State Medical Association, Del Monte, Calif., April 24, 1933.

The experiments described in this article were conducted by Dr. Charles Schroeder and his assistants at Scripps Zoological Research Hospital and were supervised by Dr. Schroeder and Robert Clarke.

1. Alexander, L. S.: Remarks on Rattlesnake Bite, J. Missouri M. A. **13**:116, 1885.

2. Anderson, W.: The Serpent and Its Venom, Pacific M. J. **53**:710, 1910.

3. Braddock, C. S., Jr.: Treatment of Snake Bites as Seen in the Jungle, New York M. J. **86**:884, 1907.

4. Blackwood, W. R. D.: As to Snake Bites, M. Register, Philadelphia **3**:272. 1888.

5. Hanley, W.: On Snake Bites, Northwest M. & S. J. **11**:5, 1851.

6. Zozaya, J., and Stadelman, R. E.: (*a*) Hypersensitiveness to Snake Venom Protein; Case Reports, Bull. Antivenin Inst. America **3**:93, 1930; (*b*) ibid. **3**:4 (Feb.) 1930.

Seminov discussed a similar case in the *Journal of Allergy* in 1930. Duke mentioned two cases of hypersensitiveness to wasp venom; one of the patients died after having been stung.

Ludy reported a case of a man bitten by a rattlesnake in 1910, who suffered from recurrent swelling of the bitten limb every spring while he remained in the county where he was bitten, but was free from the attacks while away. He had similar symptoms while visiting the reptile house in the Bronx Zoo. On examination, he was found to have an allergic reaction to the extract of rattlesnakes. He was so hypersensitive that the emanation from snakes in the mating season caused him to have practically all the symptoms of an anaphylactic state. Others have reported asthmatic attacks resulting from contact with the emanations of snakes.

Mitchell, Noguchi and do Amaral [7] have contributed more toward a scientific understanding of herpetologic literature than any other investigators. Noguchi's monograph on snake venoms will always remain a classic.

Bland,[8] Creed,[9] Escard,[10] Glasgow [11] and Klauber [12] have all been tireless in their efforts to enrich the science of herpetology, especially the branch which deals with rattlers. Klauber, of San Diego, has been indefatigable in his efforts to classify morphologically the rattlers found in San Diego County, and his work will remain a monument to an untiring interest in herpetology.

Physicians employed by the United Fruit Company have reported many cases of rattlesnake bite in South America. The Eighteenth Annual

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7. Numerous subjects on venom and antivenene published from March, 1927, to discontinuation of publication, Bull. Antivenin Inst. America.

8. Bland, W.: Bites of Venomous Snakes of Australia, Austral. M. J. **6**:1, 1861.

9. Creed, J. M.: Australasian Snakebite; Fear as a Factor in Producing Many of the Alarming Symptoms Following, Australas. M. Gaz. **3**:224, 1883.

10. Experiments on the Bite of Snakes and the Degree of Danger in Them, in: Medical Chirurgical and Anatomical Cases and Experiments Communicated by Dr. Haller and Other Eminent Physicians to the Royal Academy of Sciences at Stockholm, London. A. Linde [and others] 1758, p. 61.

11. Glasgow: M. J. **59**:81, 1903; Serum Therapy of Snake Bites, Lancet **2**:1273, 1904.

12. Klauber: New and Renamed Subspecies of Crotalus Confluentus; Remarks on Related Species, Tr. San Diego Soc. Nat. Hist., pt. 3, **6**:95 (Feb. 28) 1930; Some Observations on the Rattlesnake of the Extreme Southwest, Bull. Antivenin Inst. America **1**:7 (March) 1927; Herpetological Review: Hopi Snake Dance, Bull. San Diego Zool. Soc., Jan. 25, 1932; Different Characteristics of Southwest Rattlesnakes and Crotalus Atrox, Bull. San Diego Zool. Soc., May, 1930; Statistical Survey: Snakes in the Southern Border of California, Bull. San Diego Zool. Soc., June, 1931.

Report [13] contained a statistical study of numerous bites of employees of the company, considered from all standpoints.

In reviewing the literature on rattlesnake bite [14] and its treatmeat in America, one must go back to the year 1764 in one of the original colonial states. At that time the famous Crotalus horridus, or great timber rattler, was found and described. This snake was feared by all, and it caused many deaths among the Indians and the settlers. William Wood [15] described the treatment and symptoms of rattlesnake bite and casually mentioned an eruption which developed with other symptoms. Whether the eruption recorded was anaphylactic, due to hypersensitiveness in the person bitten, one cannot tell; it may have been caused by the empirical treatment instituted at that early date. Those bitten chewed snakeweed as a routine measure, swallowed the spittle and then applied the chewed root to the wound; of course, the patient may have been hypersensitive to the snakeweed. Wood reported the first dermatologic description of generalized dermatitis in reference to snake bite: "After being bitten by these snakes the flesh became spotted as a lepard until he was perfectly cured." He also maintained that if the patient lived the snake would die. Large quantities of whisky were always given to patients with snake bite.

The following extract was taken from a letter written in the Massachusetts Gazette [16] in August, 1764: "Patient for sixteen hours after

13. Eighteenth Annual Report, United Fruit Company, June, 1929.

14. (*a*) Bogue, R. G.: Rattlesnake Bite; Recovery, Chicago M. J. **23**:399, 1866. (*b*) Brewer, J. F.: Prairie Rattlesnakes; Their Poison and Its Treatment, Kansas M. J. **9**:57, 1897. (*c*) Cunningham, D. D.: Reports on the Results of Experiments on the Actions of Various Reputed Antidotes to Snake Venom, Scient. Mem. M. Officers India **10**:59, 1897. (*d*) Fayrer, J.: Experiments on the Influence of Snake Poison, Indian M. Gaz. **3**:169 and 193, 1868. (*e*) Gresham, W. A.: Rattlesnake Bite, J. A. M. A. **45**:1735 (Dec. 2) 1905. (*f*) Harvey: Bitten by a Snake Seven Years Dead, Calif. M. J., **22**:157, 1901. (*g*) Hawkes, C. S.: Case of Snake-Bite Followed by Unconsciousness, Intercolon. Q. J. Med. & Surg. **1**:267, 1894. (*h*) Higgins, S. B.: Snake Poison and Its Antidote, South African M. J. **6**:87, 1898. (*i*) Hirst, G. G.: A Fatal Case of Snake Poisoning, Indian M. Gaz. **42**:130, 1907. (*j*) Huxtable, L. R.: Snake Bite in Australia: Recent Statistics and a Review of Recent Obvservations, Tr. Intercolon. M. Cong., Australasia **3**:138, 1893. (*k*) Jackson: Personal letters on file in the author's office. (*l*) Jones, W. R.: Rattlesnake Bite, with Report of a Case, Bi-Month. Bull. Univ. M. Coll., Richmond **1**:143, 1896. (*m*) Kelly, H.: Personal letters on his own experiments on file in the author's office. (*n*) McFarland, J.: Progress of Knowledge Concerning Venom and Antivenin, Philadelphia M. J. **9**:492, 1902. (*o*) Mueller, A.: On Snake Poison: Its Action and Its Antidote, Sidney, Australia, L. Bruck, 1893. (*p*) Shufeldt, R. W.: An Instance of a Black Snake Attacking a Man, Am. Naturalist **25**:386, 1891.

15. Wood, William: Rattlesnakes of Massachusetts, in New England Prospect, London, 1764, chap. 2, p. 3.

16. Packard, A. S.: The Rattlesnake in New England, Am. Naturalist **2**:736, 1886.

being bitten received sweet oil and rhubarb. However, this treatment did not expell the virus, so the patient continued to swell and swell and with the swelling came the eruption." The early cases were poorly recorded and nonauthentic; nevertheless, a dermatologic significance must be attached to them.

REPORT OF A CASE

History.—C. B., aged 38, an American rancher living in the district of Escondido, married, well developed and in a good state of nutrition, came to my office two weeks after being bitten on the calf of the right leg by a salmon-colored rattler. He complained of a severe generalized eruption, which was especially pronounced on the legs and on the lateral aspect of the thighs and trunk, with areas of erythematous desquamation extending over the arms from the shoulders to the wrists. The hands and face seemed to be more or less free from the dermatitis. According to his description, the snake belonged to the family of Crotalus mitchelli. It was about 5 feet (1.5 meters) long and approximately 2 inches (5 cm.) in diameter. No sooner had the rattler bitten him than an urticarial rash developed, which completely covered his body. He maintained that as the venom entered his circulatory system and passed up the leg which was bitten a feeling of itching and burning developed until the skin over his whole body seemed to be tingling and smarting. He seemed to taste the venom. He drained the wound with a deep crucial incision and applied a tourniquet above the bite. According to his history, there were a rise in temperature, chills and cold sweating, followed by a convulsive attack. When his wife found him one hour later he was lying on his face, with dark fluid running from his nose and mouth. Apparently he was very sensitive to the effect of the venom, because usually two hours elapse before symptoms of the central nervous system develop. The eruption started soon after he tasted the poison. Four hours after being bitten he received 10 cc. of antivenene subcutaneously in the loose tissue over the abdomen. The nervous symptoms did not subside, so two hours later another 10 cc. of antivenene was injected intramuscularly. The antivenene apparently relieved the nervous symptoms; however, the dermatitis continued, later developing into a diffuse erythematous papulovesicular eruption, with blebs forming at certain points, especially around the site of the bite. The man gave a history of having been previously bitten by a rattlesnake, in 1930. He reported at my office regularly for treatment of the dermatitis, which ultimately responded to routine methods.

Examination.—General physical examination revealed no significant anomalies, with the exception of the following:

1. The patient had not slept for several nights, owing to the subjective symptoms of itching, burning and smarting. He also complained of chills, intermittent fever, headache, backache and generalized pain.

2. He had generalized abdominal distress, with continuous diarrhea and vomiting of a bloody fluid which had persisted since the bite.

3. The only previous illness which had a bearing on the case was a history of rattlesnake bite one year previously.

4. From the neurologic standpoint, the only sign was the hypersensitive reflexes.

5. The blood pressure was abnormally low—the common condition following rattlesnake bite.

6. Examination of the skin showed an erythematous eruption combined with maculovesiculopustular areas, some of which were produced by secondary excoriation confined especially to the region of the bite but which had enveloped practically all the covered surfaces of the body.

Laboratory Findings.—The only positive finding noted in the urine was albumin, 3+, associated with microscopic granular and hyaline casts. The white blood count was 17,500,000, indicating leukocytosis. The coagulation time was eight minutes, which showed the liquefying action of the rattlesnake venom.

Differential Diagnosis.—1. The patient did not respond positively to the heat and cold technic, as prescribed by Duke. 2. It has been proved that many workers with rattlesnake venom are not hypersensitive to it. 3. An urticarial rash developed in the patient prior to the symptoms of serum sickness. 4. Dye poisoning was ruled out. 5. The patient was not susceptible to common ranch shrubs, vines or weeds. All the scratch tests produced negative results.

These findings, since it was known that the patient was allergic to snake venom, showed that he was a perfect subject for experiments on anaphylaxis. One can draw only one conclusion—that he had an anaphylactic dermatitis due to rattlesnake venom.

Treatment.—I used a symptomatic routine, which included purging, alkalinization of the blood and urine, the application of soothing lotions and ointments and ultraviolet irradiation, with fractional doses of roentgen rays. Antivenene was given, as has been described.

Zozaya and Stadelman carried out a series of experiments on themselves in the field of hypersensitization. They found that various proteins may function as excitants, while others may produce hypersensitiveness and are recorded as types of bacterial proteins, animal epidermal tissues and serums. It is not surprising, then, to find that venom, with its intricate chemical formula, should be included in this group. These investigators had the opportunity to test the protein fractions of snake venom, and they isolated the two portions—the toxic and the nontoxic. The toxic fraction is that with which we are working, that is, the water-soluble portion which has been obtained in the pure state by precipitation by alcohol and electricity. All the venom which we are using is in the yellowish crystal form belonging to the toxic division.

These workers [6b] reported an interesting case:

R. S., a white man, aged 22, with no allergic reaction to foods or pollens, who had worked with snake venoms, both dried and liquid, for eight years, was bitten by a copperhead in June, 1923. For experimental purposes he received an intradermal injection of venom from the Crotalus mitchelli, the genus in which we are interested. This finding was important to us because this snake is found in the outlying districts adjacent to San Diego. In August, 1928, he was again bitten by a copperhead. The first evidence of hypersensitiveness was manifested in 1928, after he had handled dried venom. The symptoms have increased in severity since that time. However, this man's reaction to the disturbing protein was in the form of an anaphylactic desquamating, eczematous dermatitis, which followed the handling of dried snake venom. The attacks usually lasted for several days. One of the peculiar things about this case was that when the subject worked with liquid

venom he had no reaction; he was not sensitive to the emanation from snakes during the mating season, nor did he react to the handling of snakes. However, there were indications of hereditary influence in the family history.

COMMENT

The poisonous effects produced on the human body by the venom of the different species of rattlers inhabiting San Diego County must first be considered. Toxic doses of the venom of Crotalus oreganus and Crotalus mitchelli produce practically the same hemorrhagic and neurologic symptoms, while those of the former produce more of the neurologic type of symptoms.

According to Feinberg,[17] the growing complexities of the allergic theory are involved in the term "desensitization." The theory is based on the conclusion that each foreign biologic product is an antigenic unit and that it produces identical allergic reactions in all the organs and tissues in the same hypersensitive person. According to this theory, in the case which has been presented pathologic changes were produced not only in the dermal system but in all the organs and tissues. Also, it has been determined that practically all allergic excitants are polyvalent, having a type-specific and genus-specific reaction. Practically all the "diagnostic parallelisms" between skin tests and internal symptomatology have long been recognized by professional allergists.

In various laboratory projects my associates and I considered the venom as an alien protein, very complex in nature, as the formula indicates. This was used on experimental animals by means of the patch test and by intradermal and intraperitoneal routes. We attempted to produce in our laboratory animals a typical animal anaphylaxis, as described by Duke. His picture of "anaphylactic sensitiveness" can be produced in animals only by treatment with protein substances. Once sensitivity has developed, violent symptoms and often death follow parenteral treatment with the protein which elicited the condition. The sensitizing action may follow the injection of an almost infinitesimal quantity. One of Rosenau and Anderson's animals was sensitized by as little as 0.000001 mg. of protein. Whereas the sensitizing dose may be extremely small, the shock, or second, dose has to be material to be immediately effective and should be given intravenously very promptly.

The hypersensitiveness developed in this manner may last for months or years or even throughout the lifetime of the animal. Anaphylactic sensitivity is extremely specific. Duke described anaphylaxis in animals as follows:

An animal sensitized to the serum of one animal may fail to react to the serum of another animal of a different species. However, an animal sensitized

17. Feinberg, F. M.: Uses and Limitations of Skin Tests in Allergy, J. A. M. A. **95**:1665 (Nov. 22) 1930.

to certain special proteins such as protein of the crystalline lens of the eye may be found more sensitive to lens protein of unrelated species than to serum of an animal of the same species.

The condition of animals which are sensitized by treatment with foreign proteins can be rendered refractory within the period of a few hours by the injection of a sublethal dose of the protein to which they react.

This description of animal anaphylaxis, as outlined by Duke, gave us a basis to work on as we attempted to produce anaphylactic sensitiveness in laboratory animals with snake venom. The same theories which have been worked out on laboratory animals are being used today on human beings in the so-called anaphylactic illnesses. We found from our experiments that death produced by so-called anaphylactic shock in man and monkeys by the injection of different foreign proteins was caused by a spontaneous or natural hypersensitiveness due to a hereditary condition.

Natural Hypersensitiveness.—The case which I have reported falls in the classification of hypersensitive groups. The hereditary factor no doubt plays an important rôle. According to the history, no one on the maternal side of the patient's family had ever been subjected to snake bite; thus, according to the theories that most investigators have worked out, no hereditary mechanism was involved. The allergic mechanism in my patient was produced by a previous injection of venom from a snake bite one year prior to his appearance in my office. Of course, it is recognized that heredity must play an important part in this type of hypersensitiveness. Wyman, in 1872, Beerd, in 1876, and Cook and Vanderveer, in 1916, proved that peculiar constitutional sensitiveness existed in certain cases. This work has been repeatedly verified by many observers.

Naturally, one must recognize the difference between hypersensitiveness in animals and in man. In animal anaphylaxis inheritance apparently plays no part. This can be illustrated by the fact that practically all guinea-pigs are hypersensitive and are susceptible to the action of foreign proteins, while in monkeys there seems to be tremendous resistance to the action. Man, as a rule, is quite resistant. As we attempted to produce artificial anaphylaxis we considered these factors, and we realized that our experiments would not be of value unless we followed the rules which were set down as fundamental in the work on anaphylaxis by such authorities as Duke, Piness and others.

Essex and Markowitz [18] did experimental work with rattlesnake venoms in the division of experimental surgery and pathology of the

18. Essex, H. E., and Markowitz, J.: Am. J. Physiol. **92**:695, 698 and 705 (April) 1930.

Mayo Foundation. Their work was with crotalin, the same venom which we used in our experiments. They proved that there was a similarity between the shock due to crotalin and anaphylactic shock, and that sensitized dogs would go into a definite anaphylactic shock, which would be followed by a sudden drop in blood pressure accompanied by vasoconstriction of the spleen, kidneys and intestines. (This was confirmed by the results obtained by Biedl and Kraus, in 1909, and by Pearce and Isenbrey, in 1910.) At postmortem examination the blood in the liver was coagulated, and the typical hemorrhagic pathologic changes were found about all the peritoneal organs. The summary and conclusions presented by these investigators are as follows:

1. The injection of crotalin is followed by a sharp fall in the blood pressure in sensitized animals, accompanied by initial constriction of the viscera and followed by marked engorgement of the intraperitoneal organs, with loss of coagulability of the blood. 2. The intradermal injection of crotalin causes a wheal followed by an arteriolar flare. 3. The injection of crotalin is followed by bronchial constriction, which causes difficulty in breathing.

LABORATORY EXPERIMENTS

Animals.—Twelve white rabbits of the same age and approximately the same weight and several white guinea-pigs were used in the experiments. Pure crystalline venoms from Crotalus ruber, Crotalus oreganus and Crotalus mitchelli were used, with physiologic solution of sodium chloride as a diluent.

Project.—We attempted to produce dermatitis in the animals similar to the reaction reported in the case represented. In order to do this we first determined the minimum lethal dose for rabbits and guinea-pigs per kilogram of body weight, using the venom from Crotalus mitchelli, Crotalus ruber and Crotalus oreganus. This was done by injecting intramuscularly the crystalline venoms suspended in physiologic solution of sodium chloride. Patch tests were then carried out on the shaved bellies of the rabbits and guinea-pigs, using the venoms mentioned. A record was kept of the time of appearance of the erythema; later, the changes, as well as the size, depth and color of the lesion, were noted every half hour. The ordinary patch test technic was used. We then charted the results. After the patch tests we did the intradermal tests, using the same three venoms.

We recorded the findings at the height of the reaction, measured the size of the wheal in millimeters, determined whether the swelling was slight, moderate or pronounced and recorded the information, using 1+, 2+, 3+ and 4+ (1+ indicating a slight erythema; 2+, pronounced erythema; 3+, a slightly hemorrhagic reaction, and 4+, necrosis). The charts were plotted on the sides of the rabbits and ruled off with mercurochrome. Vertical figures represented diluted venoms 1, 2 and 3, while horizontal figures represented animals 1, 2 and 3.

We next tried to produce experimental anaphylaxis in previously sensitized guinea-pigs. For this experiment we used three rabbits and three guinea-pigs, which were given a minimum lethal dose of 0.005 Gm. in solution. Rabbit 1 was given an intramuscular injection of venom 1. Ten days later a minimum lethal dose of 0.01 Gm. was given intravenously. Venoms 2 and 3 were given in the same manner and in the same dilutions. The results were charted.

Tests to Determine the Possibility of Cross-Sensitization of the Different Venoms.—Three guinea-pigs were given a minimum lethal dose of 0.005 Gm.; guinea-pig 1 received venom 1; guinea-pig 2, venom 2, and guinea-pig 3, venom 3. Ten days later we made intraperitoneal injections, giving quinea-pig 1 venom 2; guinea-pig 2, venom 3, and guinea-pig 3, venom 1. This was done to determine the possibility of cross-sensitization. Intradermal injections of antivenene and mixtures of antivenene were given to separate animals to determine whether animals would react to antivenene.

Irradiation of Venoms.—1. A Burdick air-cooled ultraviolet quartz lamp was used for the experiment, with a definite technic. The distance was 20 inches; the time was two hours, and the temperature of the room was 72 F. The venom was packed in ice. After irradiation the venom was filtered, and the filtrate and precipitate were used in experiments on laboratory animals.

2. With unfiltered roentgen rays, at a distance of 20 inches, using 3 milliamperes and 88 kilovolts over a period of fourteen minutes, a cloudiness was produced. The cloudy portion was divided into two parts and was used on the experimental animals. The results will be found in the concluding section.

The results of the experiments with the minimum lethal doses, the patch tests and the intradermal injections of venom into the rabbits and guinea-pigs, with all the reactions, were charted carefully, together with the symptoms, ultimate physiologic and pathologic reactions and complete data on postmortem examination, but space does not permit publication.

CONCLUSIONS

1. All the reactions to the patch test were negative with all species of venom in the laboratory animals. (The usual twenty-four hour patch test technic was used.)

2. We produced anaphylactic reactions with sublethal doses of the different types of venom.

3. The minimum lethal dose with all three venoms was 0.003 Gm. for rabbits and somewhat less for guinea-pigs.

4. Postmortem observations revealed practically the same pathologic picture as that found in man.

5. The blood picture of guinea-pigs receiving lethal doses of all types of venom was practically the same as that of man.

6. Anaphylactic shock with apparently neurotoxic symptoms occurred in all the animals.

7. The most sensitive rabbit reacted to anaphylactic doses of venom by losing all its short hair, which corresponds to severe dermatitis in nonhairy animals.

8. Venom diluted with water loses its toxicity when exposed to air (owing to oxidation, possibly).

9. Venom treated with ultraviolet rays loses its toxicity.

10. Treatment of liquid venom with roentgen rays causes a precipitation which, when centrifugated, divides into two portions—the filtrate and the precipitate. The filtrate accentuated the hemorrhagic and neurotoxic symptoms more violently than did ordinary venom, while the precipitate, when dissolved in ordinary saline solution, caused no reaction.

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XERODERMA PIGMENTOSUM

REPORT OF A CASE

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A case of xeroderma pigmentosum in a Chinese child seems to be of enough scientific interest to warrant a report, since it is probably less common in the darker skinned races than in the white race. The disease is rarely seen even in the white race. Since the disease was first described by Kaposi, in 1870, barely two hundred cases have been reported in the literature. In Japan, a score or more of cases have been reported. As xeroderma pigmentosum is a pigmentary anomaly, it is only natural to expect to find it less frequently in persons whose pigment is more abundant and affords a better protection from the actinic rays of the sun.

During my residence in China, I saw a number of patients and had access to the records of more than 100,000 cases of patients who reported to the university hospitals annually; in this large group no other record of a case of xeroderma pigmentosum was found. Up to the present, I have been able to find only one other case reported in China, and that was by Jefferies, in 1907, in Shanghai. It is hard to conceive that in a population as large as that of China only two cases of xeroderma pigmentosum occurred, when Japan, her neighbor, with a much smaller population, has an apparently greater incidence of the disease. It is possible that the disease is not indigenous to China, or that in some cases it may have passed unrecognized.

The case described here is that of a boy, a patient of Dr. T. R. Lu, of the department of pediatrics of the West China Union University Medical School; it is with his permission that I am able to make this report.

The heavy freckling of the face, ears, neck and scalp and of the exposed surfaces of the arms, the wartlike growths on the face and the lesions of the eyes impressed me immediately with their resemblance to the lesions in a case of xeroderma pigmentosum that I had seen when I was a medical student. The skin of the exposed surfaces was dry and atrophic, and the boy was observed to scratch his arms occasionally.

A papillomatous growth was removed from over the lacrimal sac of the right eye for microscopic examination; the microscopic observations

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appear later in this report. The location of the tumor over the lacrimal sac of the right eye was identical with that in the case reported by Jefferies.

REPORT OF CASE

History.—T. C. T., a boy, aged 6 years, was admitted on March 8, 1931, complaining of growths of the eyes which interfered with his vision. From the time the child was 1 month old, the mother had noticed freckles about the neck and face. When the child was 3 years of age, he had an inflammatory process of the conjunctiva which lasted about ten days. Other attacks continued to occur with increasing frequency and severity, becoming a continuous process. The boy had great difficulty in opening his eyes in the mornings. The eyelids were glued together by the discharge. He caught cold easily, but according to his mother was as easily cured. Twenty months previous to presentation for treatment a small, circular ulcer of the cornea developed in the left eye. This was accompanied by considerable inflammatory reaction of the conjunctiva. At this time he had a swelling of one testicle, which grew progressively larger. Five months before entrance into the hospital for diseases of the eye, ear, nose and throat the boy could see indistinctly, but at the time of entrance he said that he could see fingers move before his eyes only as shadows. Three months before treatment was sought, a small protrusion at the inner canthus of the right eye developed. The patient was transferred from the department of ophthalmology to the department of pediatrics for the treatment of his general condition. It was here that I first saw him and noted the facts relative to his dermatologic condition. He had a mildly dry, atrophic, itchy skin, which appeared to be stretched; it was covered with freckles, white spots and telangiectases, and small tumor growths were present on the face, the largest being over the lacrimal sac of the right eye; there were numerous fine, branny scales over all of the exposed parts. The eyes had corneal and conjunctival tumescences which were ulcerated in places. Vision was limited to seeing the fingers move as shadows before the eyes.

The paternal grandfather died at 90. He had a condition similar to that of the boy. Freckles and tumors of the face were present, but the eyes were not affected. The father and mother were alive and well. The mother had had eight pregnancies. The first three children, boys, died of convulsions at the age of 1 month. The fourth child, a girl, died of convulsions at 8 years. The patient was the fifth child. The sixth child, a girl, died of convulsions at 1 year, and the seventh child, a boy, died at 6 months from an unknown cause. The eighth child, a boy, died of "closed mouth" (tetanus) at 20 days.

The patient's first tooth appeared at 6 months. He could stand at 1 year, talk at 1½ years and walk at 13 months. He was vaccinated for smallpox at 4 years and had measles at 5. He was breast fed for twenty-two months, with a supplementary diet of rice and cakes. His diet on admission was rice and cakes.

Physical Examination.—The patient was a well nourished, somewhat apathetic child who scratched exposed parts. The muscles were firm. The skin has already been described. The left ear discharged a thin, watery substance. Vision of the left eye was limited to finger shadows, the number of which could be counted. There was an ulcerated, thick cornea. Vision of the right eye distinguished finger shadows. There were a growth over the lacrimal sac, corneal ulceration and tumor-like growths of the conjunctiva. There was a considerable discharge from the nose. The lips were dry and crusted. The lymph glands of the neck were palpably enlarged. The chest and abdomen showed no pathologic condition.

No testicles could be felt in the scrotum. There was an undescended testicle in the left inguinal region. The temperature was 99.2 F., and the pulse rate, 108. The respiratory rate was 24. The laboratory examinations showed nothing of consequence. Clinical examination revealed a small new growth over the lacrimal sac of the right eye. The diagnosis was epithelioma of xeroderma pigmentosum.

The growth was excised and the patient discharged on March 12. He showed no improvement when last observed, twenty months later. The mother refused to let him take further treatment.

Laboratory Examination of Tissue.—A small, gray nodule measuring 9 by 8 by 5 mm. was visible. It was firm and covered by epithelium. On section it was firm but not densely hard, and gray-white; it appeared somewhat lobulated.

As seen microscopically, the specimen consisted of two parts. The larger part was composed of epithelial squamous cells of large size and pale protoplasm, with relatively small nuclei. The cells were regularly placed like a tile floor, and here and there throughout the section were blood vessels carried in a core of connective tissue around which was the regularly arranged germinal epithelium (the basal cell layer). This part was papilloma. Detached from this was a smaller part of the section which consisted of small, deeply stained masses of epithelial basal cells in an irregular alveolar arrangement and showing mitotic figures.

The diagnosis was basal cell carcinoma and papilloma (rodent ulcer). The examination was made by Dr. T. H. Williams.

FACTORS INVOLVED IN LEATHER DERMATITIS

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PHILADELPHIA

Until Lewis'[1] paper entitled "Dermatitis Venenata Due to Shoe Leather" appeared in 1931, little interest in leather as a source of dermatitis was manifested in the literature. Shortly after the World War a series of papers on dermatitis due to leather substitutes appeared, but beyond brief case reports the only etiologic study of the irritant effects of leather was undertaken by Macht.[1a]

Leather dermatitis occurs infrequently. A prominent manufacturer of hat leather stated that complaints of irritation have not averaged more than one or two a year over a period of many years. Cases of so-called hatband dermatitis are deemed of sufficient interest clinically to be presented at society meetings. Statistics gathered from the literature on occupational dermatitis likewise show that irritation of the skin due to leather and leather ingredients is uncommon. Gardiner[2] cited 6 instances in 622 cases of occupational dermatoses, and Lane,[3] 44 in 2,000 cases of industrial dermatoses. Knowles[4] observed eczema of the fingers, hands and forearms in 5 tanners, 1 morocco finisher, 2 morocco workers and 1 pocketbook maker in 4,142 cases of occupational eczema. Stauffer,[5] of Bloch's clinic, noted 3 cases due to leather (cap sweat-band; shoe leather; leather jacket) in 187 cases of dermatitis. This low incidence of dermatitis due to leather suggests the prominent rôle played by individual susceptibility.

Irritations produced by leather have been recognized for a long time. In his textbook, in 1883, Hyde[6] mentioned dermatitis venenata

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1. Lewis, G. M.: Dermatitis Venenata Due to Shoe Leather, Arch. Dermat. & Syph. **24**:597 (Oct.) 1931.

1a. Macht, D. I.: Dermatitis from Sweat Bands of Hats, Urol. & Cutan. Rev. **35**:445, 1931.

2. Gardiner, F.: Occupational Dermatoses, Brit. J. Dermat. **34**:297 (Oct.) 1922.

3. Lane, C. G.: Skin Diseases with Particular Reference to Their Industrial Application, J. Indust. Hyg. **7**:444, 1925.

4. Knowles, F. C.: The External Origin of Eczema, Particularly the Occupational Eczemas, as Based on a Study of 4,142 Cases, J. Cutan. Dis. **31**:11, 1913.

5. Stauffer, H.: Die Ekzemproben (Methodik und Ergebnisse), Arch. f. Dermat. u. Syph. **162**:517, 1931.

6. Hyde, J. N.: Diseases of the Skin, Philadelphia, Lea Brothers & Co., 1883.

from "the leather lining of the inside of the cap or hat." Since that time, other instances of irritation of the skin due to leather or leather substitutes have been reported: artificial leather used in sweat-bands and for other purposes (Appel;[7] Baer;[8] Bettmann;[9] Forbroese;[10] Galewsky;[11] Gebert;[12] Heffter;[13] Hölker;[14] Hübschmann;[15] Jersild;[16] Müller-Hess;[17] Oppenheim;[18] Pantoppidan;[19] Sachs;[20] Siebert;[21] Schemel;[22] Stangenberg;[23] Theddering;[24] Bronnum[25]); leather wrist watch bands (Rasch[26] [artificial]; Goodman[27]); leather sweat-bands

7. Appel, J.: Dermatitis frontalis durch Hutlederersatz, Dermat. Wchnschr. **71**:775, 1920.

8. Baer, T.: Dermatitis infolge Gebrauches einer mit "Ersatzleder" versehenen Bartbinde, München. med. Wchnschr. **67**:874, 1920.

9. Bettmann, S.: Bemerkungen über eine durch Schweissledererersatz hervorgerufene Dermatitis, München. med. Wchnschr. **67**:29, 1920.

10. Forbroese, V.: Kunstleder als Schweissledererersatz und seine Prüfung, Ztschr. f. Untersuch. d. Nahrungs-u. Genussenmittel **42**:113, 1921.

11. Galewsky, E.: Hautentzündungen nach Ersatzstoffen, Klin. Wchnschr. **39**:1767, 1924.

12. Gebert: Dermatitis der Stirn infolge Reizung durch Kunstleder, Arch. f. Dermat. u. Syph. **137**:13, 1921.

13. Heffter, A.: Die Ursachen der Gesundheitsschädlichkeit der Ersatzschweissleder, Ber. d. deutsch. pharmakol. Gesellsch. **32**:139, 1922.

14. Hölker: Hautausschläge bei Ersatzschweissleder in Uniformmützen, Deutsche med. Wchnschr. **46**:492, 1920.

15. Hübschmann, K.: Ekzem durch Lederersatz in Hüten, Ceská dermat. **2**:140, 1921.

16. Jersild, O.: Fall von Schweissleder Dermatitis, Ugesk. f. læger **83**:1357, 1921.

17. Müller-Hess, R. V.: Dermatitis, hervorgerufen durch phenolhaltigen Schweissledererersatz, Deutsche med. Wchnschr. **46**:491, 1920.

18. Oppenheim, M.: Demonstration von drei Fällen von akuter Dermatitis der Stirnhaut durch Kunstleder, Arch. f. Dermat. u. Syph. **137**:56, 1921.

19. Pantoppidan, B.: Schweissleder Dermatitis, Ugesk. f. læger **83**:1271, 1921.

20. Sachs, O.: Gewerbekrankheiten, in Jadassohn, J.: Handbuch der Haut- und Geschlechtskrankheiten, Berlin, Julius Springer, 1930, vol. 14, pt. 1.

21. Siebert, C.: Ueber gehäuftes Vorkommen von Stirndermatitis, Deutsche med. Wchnschr. **46**:355, 1920.

22. Schemel, K.: Ueber Schweissleder Verbrennung der Stirnhaut bei der Sicherheitspolizie Koenigsberg, München. med. Wchnschr. **67**:700, 1920.

23. Stangenberg, J.: Hautentzündung durch Hutschweissleder, Deutsche med. Wchnschr. **46**:355, 1920.

24. Theddering: Hutlederersatz und Stirnekzem, München. med. Wchnschr. **67**:307, 1920.

25. Bronnum, A.: Sweatband Dermatitis, Ugesk. f. læger **83**:1402 (Oct. 27) 1921.

26. Rasch, C.: Kunstlederdermatitis von einer Armbanduhr, Hospitalstid. **65**: 15, 1922.

27. Goodman, H.: Watchstrap Dermatitis, Urol. & Cutan. Rev. **31**:648, 1927.

in hats (Chargin;[28] Bechet;[29] Andrews;[30] Sutton;[31] Ormsby;[32] Ramirez and Eller;[33] Stauffer; Macht; Simon and Rackemann,[33a] and others); leather jackets (Stauffer); shoe leather (Bloch;[34] Stauffer; Lewis; Anderson and Ayres;[35] Simon and Rackemann), and leather gloves (Parkhurst[36]). Several cases of dermatitis due to dyed gloves have been reported (Simon;[37] Cabello[38]), but the basic material of the gloves was not stated. Dermatitis due to furs is excluded from this study.

CLINICAL APPEARANCE

The clinical appearance of leather dermatitis, except for configuration and distribution, is not distinctive. The process may be acute, subacute or chronic. Involvement usually remains localized at the sites of contact, but may extend far beyond. Secondary pyogenic infection may occur In hat sweat-band dermatitis the distribution (as in my case 1) may seem odd, but a study of the angle at which the hat is worn on the head may account for the patch of dermatitis due to a hat sweat-band at the nape of the neck. The extension of the dermatitis on the forehead may involve the conjunctivae. Wrist watch strap dermatitis may exist as a sharply localized band or, as in Goodman's case, may extend up the arm to the elbow. In shoe leather dermatitis, the process may (as in Lewis' case and in my case 2) exist as a band of dermatitis coinciding with a leather band around the upper inner edge of the shoe; it may

28. Chargin, L.: Hat-Band Dermatitis, Arch. Dermat. & Syph. **26**:1128 (Dec.) 1932.

29. Bechet, P. E.: Hat Band Dermatitis, Arch. Dermat. & Syph. **16**:811 (Dec.) 1927.

30. Andrews, G. C.: Diseases of the Skin, Philadelphia, W. B. Saunders Company, 1931.

31. Sutton, R. L.: Diseases of the Skin, ed. 8, St. Louis, C. V. Mosby Company, 1931.

32. Ormsby, O. S.: Diseases of the Skin, ed. 3, Philadelphia, Lea & Febiger, 1927.

33. Ramirez, M. A., and Eller, J. J.: The "Patch" Test in "Contact Dermatitis" (Dermatitis Venenata), J. Allergy **1**:489, 1930.

33a. Simon, F. A., and Rackemann, F. M.: Contact Eczema Due to Clothing, J. A. M. A. **102**:127 (Jan. 13) 1934.

34. Bloch, B.: The Rôle of Idiosyncrasy and Allergy in Dermatology, Arch. Dermat. & Syph. **19**:175 (Feb.) 1929.

35. Anderson, P., and Ayres, S., Jr.: Dermatitis Venenata Due to Shoe Leather, J. A. M. A. **99**:25 (July 7) 1932.

36. Parkhurst, H. J.: Dermatitis Venenata Due to Deerskin Gloves, J. A. M. A. **99**:301 (July 1) 1932.

37. Simon, C.: Une nouvelle rançon de la mode; dermite artificielle due à des gants noirs, Bull. méd., Paris **47**:168, 1933.

38. Cabello, E. R.: Dermatitis of Unusual Origin, Progresos de la clín. **39**: 483, 1931.

appear as an eczematous eruption on the dorsa and sides of the feet to the toes (Lewis; Anderson and Ayres), or it may be confined to the interdigital spaces of the feet (Grasreiner [39]). In glove dermatitis, the process may be indistinguishable clinically from any of the vesicular eruptions of the fingers (Parkhurst).

Marked sweating seems to aggravate these conditions, although in Bechet's case of hatband dermatitis the condition was worse in the winter, when the patient wore his hat more.

DIFFERENTIAL DIAGNOSIS

Leather dermatitis must be differentiated, in the various locations in which it most commonly occurs, from other conditions which are indigenous to those sites. Lewis, in his paper on shoe leather dermatitis, performed a distinct service in calling attention again to the fact that all pedal dermatitides are not of fungous origin. Vesicular dermatoses occurring on the feet may be divided into three main etiologic and pathologic groups: (1) mycotic dermatoses, (2) artificial dermatoses due to chemical or physical irritation and (3) dyshidrosis. To this classification may be added the type of condition that Mitchell [40] described as possibly being of pyogenic origin. The three major groups are easily identified: the first by the presence of fungi, the second by the use of the patch test and the third mainly by exclusion and by histologic studies. Similar considerations apply to dermatitis of the hands. Barber [41] described 3 cases of eruptions on the hands and feet which a physician could not distinguish clinically: In the first case fungi were found, and in another, staphylococci; in the third, no causative agent could be detected. In the case of the hands, the absence of fungi may be consistent with the "phytid" conception (Williams; [42] Sulzberger; [43] Jadassohn; [44] Bloch; Peck [45]). Wrist strap dermatitis is so character-

39. Grasreiner, H.: Aetiologie des interdigitalen Ekzems, Dermat. Wchnschr. **92**:12, 1931.

40. Mitchell, J. H.: Amycotic Dermatoses Simulating Ringworm and Erosio Interdigitalis Blastomycetica, Arch. Dermat. & Syph. **19**:659 (April) 1929.

41. Barber, H. W.: Acrodermatitis Continua vel Perstans (Dermatitis Repens) and Psoriasis Pustulosa, Brit. J. Dermat. & Syph. **42**:500 (Nov.) 1930.

42. Williams, C. M.: The Diagnosis of Some Eruptions of the Hands and Feet, Arch. Dermat. & Syph. **5**:161 (Feb.) 1922; Dermatophytid Complicating Dermatophytosis of the Glabrous Skin, ibid. **13**:661 (May) 1926; Dermatophytid Complicating Tinea Cruris, ibid. **22**:637 (Oct.) 1930.

43. Sulzberger, M. B.: The Pathogenesis of Trichophytids, Arch. Dermat. & Syph. **18**:891 (Dec.) 1928.

44. Jadassohn, W.: Beiträge zur Genese der Allergie bei Impfmykosen, Arch. f. Dermat. u. Syph. **153**:476, 1927.

45. Peck, S. M.: Epidermophytosis of the Feet and Epidermophytids of the Hands, Arch. Dermat. & Syph. **22**:40 (July) 1930.

istic clinically that little difficulty is encountered in the diagnosis. However, I have seen a case of dermatitis of the wrist due to butesin picrate which absolutely mimicked wrist watch strap dermatitis. In the matter of the misnamed hatband dermatitis, a number of conditions are called into differential consideration. One of the most confusing of these conditions is hair dye dermatitis with manifestations on the forehead (case 4). In my case, patch tests with the sweat-band of the patient's own hat gave a positive result, but more careful consideration soon revealed the fact that this was due to contamination of the leather by hair dye. Dermatitis due to other external causes, such as local application of cosmetics (Lain;[46] Hollander[47]) and the close fit of women's hats, plus dye (Frei[48]), can be distinguished by proper attention to the history and the use of the patch test. Case 5 illustrates how closely seborrheic dermatitis localized on the forehead may resemble hatband dermatitis. I have also seen a case of diathetic eczema with marked seborrhea wrongly diagnosed as hatband dermatitis.

REPORT OF CASES

CASE 1.—*Hat sweat-band dermatitis of unusual distribution, complicated by conjunctivitis and relieved temporarily by extraction of carious teeth.*

J. J., a syphilitic colored man of 29, had complained since 1928 of dermatitis on the forehead which varied in intensity from time to time during the period of observation. On admission, he presented a pustular eruption confined to the area covered by the sweat-band of his hat, a soggy dermatitis of the dorsa of the feet and carious teeth. The eruption on the feet cleared up more slowly than that on the forehead. While under antisyphilitic therapy, he had several flare-ups of the dermatitis on the forehead and on the feet. The eruption on the feet was diagnosed as tinea or possibly an arsenical eruption. In 1930, when the patient presented himself he had a patch of chronic dermatitis on the occipital region, which was explained by the fact that he was wearing his hat at such an angle that the back part of the leather sweat-band came in contact with the affected area. A severe attack of the dermatitis on the forehead and in the occipital region occurred in 1931. Patch tests with the leather from his hat were positive. This attack resisted all forms of local treatment and was complicated three weeks later by conjunctivitis. Attention to the eyes and extraction of four carious teeth were followed by rapid involution of the dermatitis, and for eight months there was no dermatitis in spite of the fact that the patient wore hats with leather sweat-bands.

CASE 2.—*Dermatomycosis of the hands followed by hatband dermatitis; dermatomycosis of the feet complicated by shoe leather dermatitis; flare-up of dermatomycosis caused by recurrence of shoe leather dermatitis.*

M. R., a syphilitic white man, a street car conductor, had a vesicular dermatomycosis of the hands on admission to the clinic. Returning after a lapse of six

46. Lain, E. S.: Cosmetic Eruptions, South. M. J. **25**:718 (July) 1932.

47. Hollander, L.: Dermatitis Produced by Cosmetics (La Geradine), J. A. M. A. **101**:259 (July 22) 1933.

48. Frei, W.: Eczema Caused by Women's Hats, Deutsche med. Wchnschr. **57**:55 (July 9) 1931.

months, he presented a recurrence of the dermatomycosis of the hands and typical hatband dermatitis. Various studies, including patch tests, were undertaken, and during this period the dermatitis on the forehead was variable, depending mainly on the weather. Three months after the second admission, a severe dermatitis occurred on the feet. The eruption occupied the parts of the feet covered by the shoes, with marked accentuation at the upper limit in a band formation. This band coincided with a brown strip of leather trimming the upper edge of the black shoes which the patient wore. In addition, there was interdigital maceration of both feet. The results of examination for fungi were as follows: interdigital spaces, positive; dorsa of feet, loaded with fungi; band of dermatitis, negative after long search. Inquiry revealed that the patient had begun to wear daily a pair of black shoes which he had used for dress only for several months. Removal of the shoes was followed by rapid involution of the band of dermatitis, but the dorsa of the feet and the interdigital spaces continued to show fungi. Treatment for dermatomycosis was resorted to until daily scrapings were negative. A recurrence of the band of dermatitis, with a flare-up of the dermatomycosis of the feet (with positive scrapings), followed the wearing of the black shoes. During the time of the severe involvement of the feet, there was no corresponding flare-up on the forehead. A trichophyton test during this period was positive.

CASE 3.—*Shoe leather dermatitis; arsphenamine dermatitis.*

M. D., a housewife, aged 27, with congenital syphilis, presented a mild arsphenamine dermatitis shortly after the inception of antisyphilitic treatment. About a year later, during a period of hot weather, when she wore no stockings, a dermatitis developed on the feet which was proved by patch tests to be due to her shoes.

CASE 4.—*Hair dye dermatitis mimicking hatband dermatitis.*

W. E., a syphilitic colored waiter, presented dermatitis of the forehead and conjunctivitis of two weeks' duration following the application of "Godfrey's Jet Black Coloring for the Hair and Beard." Patch tests were positive with the hair dye and the sweat-band of the patient's hat but negative with leather from other hats.

CASE 5.—*Seborrheic dermatitis versus hatband dermatitis.*

P. S., an unemployed white barber, presented an oozing dermatitis on the forehead and the left upper eyelid following the local application of an ointment for seborrheic dermatitis. On the involution of the acute phase a picture resembling hatband dermatitis remained. Patch tests were negative.

MANUFACTURE OF LEATHER

The process of leather manufacture and formulas for hide tanning have not been standardized. Textbooks on the chemistry of leather (Wilson;[49] Procter;[50] Rogers[51]) yield little more to the uninitiated than an outline of the processes used in a given locality. However, for the sake of clearness, I shall delineate the materials and methods

49. Wilson, J. A.: The Chemistry of Leather Manufacture, New York, The Chemical Catalog Company, Inc., 1923.

50. Procter, H. R.: Principles of Leather Manufacture, ed. 2, New York, D. Van Nostrand Company, 1922.

51. Rogers, Allen: Practical Tanning, New York, Henry Carey Baird & Co., Inc., 1922.

employed in manufacturing the particular leather (hat sweat-band) used as a test object in this study.

Most of the leather used for the sweat-bands of hats is made from sheepskin. Before tanning, the hides are treated to prevent putrefaction and are washed and soaked to remove blood and salt and to extract albumin and other nitrogenous matter soluble in water. The hair is loosened by lime solutions and is removed, with any superfluous bits of flesh, by means of knives on a revolving drum. Excess lime is removed by weak acids and bacteria, and the skins are pickled in a solution of salt and sulphuric acid, which brings them to a state suitable for tanning.

Most of the leather used for hats is tanned with vegetable tannic acids, quebracho extract, sumac and chestnut. Synthetic tanstuffs are also used. These consist of substances manufactured from phenol and hydrocarbons which are converted into leather-forming materials by sulphonation with sulphuric acid and subsequent

TABLE 1.—*Method of Producing Different Finishes*

Finished Leather	Dye*	Finish	Binder
1.....	Phosphine and chrysoidin	Brown pigment	Shellac (containing ammonia and sodium borate)
2.....	Chestnut dye (phosphine, chrysoidin, bismarck brown)	Chestnut vat dye	Glazed seasoning (containing orange shellac, blood albumin, casein, oil of mirbane, evaporated milk, ammonia and sodium borate)
3.....	Phosphine and chrysoidin	Vat dye	Glazed seasoning
4.....	Light dye	Pigment containing mixture of chocolate, yellow and ecru	Shellac
5.....	No dye	Pigment containing mixture of white and mild yellow	Shellac

* A small amount of potassium bichromate solution is used to set the dyes. No. 2 contains more potassium bichromate than no. 3.

condensation with formaldehyde. After the skins are tanned, they are dried and treated in various ways, depending on the result desired. The goods are first shaved on the flesh side to make the thickness uniform and are then scoured. After this, they are "fat-liquored" with oils such as neat's foot oil, cod oil and castor oil to make them pliable and water-proof. The next process is that of dyeing the leather, for which basic dyes are usually employed. Owing to the shortage of dyes during the World War, pigments of various types were employed. To get these pigments into suspension, they are mixed with soluble oil, casein, blood albumin and other materials. The leather is then treated either with a vat dye and a "glazed seasoning" or, in the case of leathers to be given a pigment finish, with a shellac binder. In addition to these procedures, there are many mechanical means which enhance the attractiveness of the leather. Leather is therefore a complex material free from hair, with changed proteins and containing numerous substances some of which penetrate deeply while others are merely attached to the surface.

I have studied five specimens of hat leather and all the ingredients used in their manufacture. The five specimens were:

1. Brown smooth finish (not glazed)
2. Dark brown (chestnut) glazed finish

3. Light brown glazed finish
4. Light tan smooth pigment finish
5. Very light glazed finish (pigment)

All these leathers were made from sheepskin, tanned with vegetable and synthetic tanning materials (quebracho, sumac, chestnut, syntan) and "fat-liquored." The tanned leather was then treated to make the individual finishes as shown in table 1.

Therefore, the individual substances that were available for patch testing were as follows:

Fresh raw skin (sheep)
"Pickled skin"
Dried skin
Crusted skin (skin plus tanning material)
Fat liquor
Tanning substances (quebracho, chestnut, sumac, syntan)
Dyes (phosphine, chrysoidin, bismarck brown)
Dyed leather (tanned leather plus dye) for finished leathers 1, 2, 3 and 4 (no. 5 contained no dye)
Potassium bichromate solution (½ ounce [15 Gm.]) to 6 gallons [5.6 liters]) of water
Pigments and components for finished leathers 1, 4 and 5
Vat dyes for finishes 2 and 3
Shellac
Glazed seasoning
Finished leathers 1 to 5 inclusive

PRELIMINARY TESTS

Preliminary to a study by means of patch tests with the materials listed, certain tests were made in various cases. In case 1, a positive patch test was obtained with every new or old hat sweat-band studied. The patient also showed an apparent increased sensitivity with each successive series of tests. Usually the reaction did not become definitely positive before forty-eight hours. Repeated patch tests made with the fluid taken from the bullae produced by a positive reaction always gave negative results.

In case 2, positive results were obtained repeatedly for many leathers (a new hatband leather two winters old, another new hatband, a seventy-two hour ether extract of the leather from the first new hat [this test was still positive one month after application], the brown inner lining [leather] of the shoes mentioned in the report and the black leather from the tongues of the same shoes). Most of the positive reactions appeared in about twenty-four hours and remained for varying lengths of time. To guard against temporary desensitization, tests were made from time to time with leather from the first hat mentioned. The reaction to each successive test seemed to be more intense and lasted longer than the previous ones in spite of the fact that various sites

on the arms and forearms were used for the control tests. In order to rule out sensitivity to the hairs of various animals in this patient, intradermal tests were made by Dr. Richard Kern of the Allergy Division of the University of Pennsylvania Hospital with sheep wool, cattle hair, dog hair, horse hair and rabbit hair. All gave negative results. Precipitation tests made by Mr. Adolf Crescoff with the serum of the patient and with that of a normal control against the seventy-two hour ether extract of hat leather were negative in all dilutions tested.

In view of the distribution of the dermatitis in the patient with hair dye dermatitis (case 4), a patch test was made with the sweat-band of the patient's hat. This test was negative after twenty-four hours and positive after forty-eight hours. However, patch tests with the sweat-band of the hat of the patient in case 2 were negative. This patient also presented a mild adhesive plaster dermatitis.

Patch tests made with the leather from the hat of the patient in case 2 on a patient who had an arsphenamine dermatitis and who gave a marked cutaneous reaction to the local application of various arsphenamine derivatives were negative. A number of normal controls tested with various hat leathers gave negative reactions.

RESULTS OF PATCH TESTS

The results of tests in cases 1, 2 and 4 with various leathers and ingredients are listed in table 2.

In case 2 tests were made with the following substances, and the results were negative: components of pigment for finished leather 4 (yellow, ecru and chocolate); components of pigment for finished leather 5 (mild yellow and white); bismarck brown solution; chestnut dye and tanning mixture (quebracho-chestnut); chestnut dye and potassium bichromate solution; raw sheepskin (fresh from sheep); "pickled" sheepskin; sweat and potassium bichromate solution; sweat and tanning mixture; sweat, tanning mixture and chestnut dye; sweat and chestnut dye.

Certain facts stand out in the analysis of the results of these patch tests. It is obvious that persons vary in the intensity of the response to the same irritant, in the same concentration and acting for the same length of time. Contrary to expectation, all hat leather need not cause irritation in all sensitive persons, but in a very sensitive subject reactions of varying grades to all leathers may be anticipated. The irritant properties of a given leather may be dependent not only on one substance but on a number acting singly or in combination. Certain apparent incongruities in results are apparent. The same tanned hide was the basic leather for all the specimens studied. The patients in cases 1 and 2 reacted positively to this leather, but the patient

in case 2 did not respond to finished leathers 1 and 3 and reacted irregularly to leather 5. No explanation for this can be offered except that the substances added to the tanned hide, since they were nonirritating to this patient, may have acted as a protective coat. Of the specimens studied, leather 2 was the most irritating. The finished leather, the tanned hide and the "cellar" leather elicited positive reactions in both cases, and the vat dye provoked a specially violent local response in case 1.

With reference to the irritating properties of the tanned hide, in case 2 the only ingredient found at fault was the syntan. This could not

TABLE 2.—*Results of Patch Tests*

	Reactions								
	Case 1			Case 2			Case 4		
Test Material	24 Hrs.	48 Hrs.	72 Hrs.	24 Hrs.	48 Hrs.	72 Hrs.	24 Hrs.	48 Hrs.	72 Hrs.
Finished leather 1 (finish 1)...	—	+	+	—	—	—	—	—	—
Finished leather 2 (finish 2)...	—	++++	++++	++	+++	+++	—	—	—
Finished leather 3 (finish 3)...	—	+++	+	—	—	—	—	—	—
Finished leather 4 (finish 4)...	—	++	+	+++*	+++	+++	—	—	—
Finished leather 5 (finish 5)...	—	+	+	++	+++	+++	—	—	—
Raw hide	—	—	—	—	—	—	—	—	—
Tanned hide (crusted).....	++++	++++	++++	—†	++	—	—	—	—
Dyed leather for finish 1.....	—	—	—	—	—	—	—	—	—
Dyed leather for finish 2.....	++++	+++	++++	+++	+++	+++	—	—	—
Dyed leather for finish 3.....	—	—	—	—	—	—	—	—	—
Dyed leather for finish 4.....	—	—	—	—	++	—	—	—	—
Chestnut-quebracho tanstuff..	—	—	—	—	+	—	—	—	—
Synthetic tanstuff		No tests		++‡	++	++		No tests	
Sumac tanstuff	—	—	—	—	—	—		No tests	
Fat mixture ("fat liquor")...		No tests		—	—	—		No tests	
Phosphine-chrysoidin dye	—	—	—	—	—	—	—	—	—
Pigment for finish 1.....	—	—	—	—	—	—	—	—	—
Shellac	—	—	—	—	—	—	—	—	—
Glazing material (seasoning)	—	—	—	—	—	—	—	—	—
Chestnut dye for finish 2.....	—	—	—	—#	—	—	—	—	—
Vat dye for finish 2.....	++++	+++++	+++++	—	—	—		No tests	
Vat dye for finish 3.....	—	—	—	—	—	—		No tests	
Pigment for finish 4.....	—	—	—	—	—	—		No tests	
Pigment for finish 5.....	—	—	—	—	—	—		No tests	

* Two of three tests positive.
† Repeated test positive.
‡ Repeated test negative.
# Three tests.

be substantiated by repeated tests, the question being left unsettled. It was recognized that even though single substances were nonirritating, combinations used in the manufacturing processes might be capable of producing a reaction. Trials along this line gave negative results. Since certain influences, e. g. that of sweat (Stauffer), may be necessary to produce dermatitis, doubtful tests were repeated with the materials in combination with sweat. The results were negative.

An analysis of the results of the patch tests indicates that in leather dermatitis (hat leather) the irritating substance (or substances) is soluble in ether; it is not present in all leathers unless, perhaps, a person is extremely sensitive to low concentrations, and it is not absorbed

through the intact skin unless in insufficient concentration to excite a reaction in a person very sensitive to hat leather (negative patch tests to blister fluid). This lends support to the idea that the various substances do not act directly but possibly excite the production in the skin of a common substance, which in turn produces the dermatitis. The sensitivity to hat leather is usually specific, since persons sensitive to other substances react negatively to hat leather and its ingredients, and persons sensitive to hat leather are not sensitive to other known causes of skin irritation. As far as our tests show, the irritant factors in leather dermatitis are tanned hide (probably due to syntan) and (in 1 case) the vat dye.

A search of the literature for the possible causes of leather dermatitis has revealed reports which incriminate the materials used in almost every stage of leather manufacture. Munster [52] compiled a list of forty-two substances used in leather manufacture as possible sources of trouble. Parkhurst found that the cause of the eruption in his case of glove dermatitis was deerskin (undyed but tanned). I have been unable to find a direct reference to dermatitis due to sheepskin, but reports exist which prove that wool and hydrous wool fat are possible causes of dermatitis (Lord; [53] Sulzberger and Morse [54]). Numerous references to irritations by chromates are available (Knowles; Prosser White; [55] Weber [56]). Lullo [57] noted many cases of dermatitis due to quebracho. Prosser White also mentioned quebracho and sumac as sources of dermatoses. Witt [58] stated that synthetic tanning materials (syntan and D M) contain aldehydes, hydrocarbons, naphthols and phenols which may possess irritant properties. Weber listed lime, arsenic sulphide and chromic acid as irritants affecting tanners. Formaldehyde used to tan gloves is also cited by Prosser White as a source of dermatitis. Cases of dermatitis due to dyes used in coloring the leather are numerous: dyes (J. C. White; Andrews); brown dyes (Grasreiner);

52. Munster, D.: Forty-Two Occupational Disease Hazards in One Industry, J. Indust. Hyg. **7**:299, 1925.

53. Lord, L. W.: Cutaneous Sensitization to Wool, Arch. Dermat. & Syph. **26**:707 (Oct.) 1932.

54. Sulzberger, M. B., and Morse, J. L.: Hypersensitiveness to Wool Fat, J. A. M. A. **96**:2099 (June 20) 1931.

55. Prosser White, R.: The Dermatergoses or Occupational Affections of the Skin, New York, Paul B. Hoeber, Inc., 1928.

56. Weber, L. F.: A List of Cutaneous Irritants, Arch. Dermat. & Syph. **21**: 761 (May) 1930.

57. di Lullo, O.: Le "paaj," dermite provoquée par le quebracho rouge (Schinopsis lorentzii), Compt. rend. Soc. de biol. **99**:1000, 1928.

58. Witt: Concerning New Organic Tanning Materials, Ztschr. f. Gewerbehyg. **31**:50 (Sept.) 1924.

leather dyes (Stauffer; Suchier[59]); aurantia (Crocker;[60] Helier;[61] J. C. White; Knowles); bismarck brown (Weber; Prosser White; Bridge;[62] Lucas[63]); chrysoidin (Prosser White; report of the Departmental Commission on Industrial Diseases for 1907). Prosser White listed also as possible causes of dermatitis sodium hyposulphite and oxalic acid. Vat dyes are also mentioned as irritating. Arzt[64] cited a shellac, used as a binder in hat leather, as a source of dermatitis. Macht thought that nitrocellulose lacquer was the cause of the dermatitis in his case.

Analysis of the cases suggests that the etiologic background of leather dermatitis is complex. It involves elements of specific allergic sensitivity and of contributory or induced sensitivity dependent on bacterial foci in the body (focal infection), fungous infections and injuries of the skin itself, and on certain constitutional factors (diet, sweating, seborrhea and ichthyosis). The latent period also deserves notice.

The cases of Lewis, Anderson and Ayres, Parkhurst, Bloch, Stauffer, Suchier and Grasreiner have amply demonstrated that more attention should be paid to the possibility that dermatitis of the hands or feet may be due to causes other than fungi. My case 2 brings up another problem in that the condition is apparently a combination of dermatomycosis and dermatophytids occurring simultaneously with and aggravated by specific sensitization to leather. White and Taub[65] have noted that "in some people who have fungous infections the skin is so altered that it becomes sensitive to certain foods, external irritants, and the like to which no previous clinical manifestations had ever occurred." These authors have seen 18 cases in which it appeared that an eruption of the glabrous skin occurring either immediately or a short time after a flare-up of a fungous infection might be due to sensitization to substances other than circulating fungi or fungous toxins; the skin had apparently been rendered sensitive by the superficial fungous infection. The fungi were only a predisposing factor to what appeared to be a

59. Suchier: Akute Dermatitis durch Lederfarbmittel, München. med. Wchnschr. **75**:570, 1928.

60. Crocker, H. R.: The Conditions Which Modify the Characters of Inflammation of the Skin and Their Influence on Treatment, Lancet **1**:491, 1903.

61. Helier, cited by Crocker.[60]

62. Bridge: Annual Report of the Chief Inspector of Factories and Workshops, London, His Majesty's Stationery Office, 1924, p. 76.

63. Lucas, E. W.: The Books of Receipts (Beasley), ed. 11, London, I. & A. Churchill, 1907, p. 462.

64. Arzt, L.: Dermatitis bei Radiamaturen (Shellack), Wien. klin. Wchnschr. **37**:530, 1924.

65. White, C. J., and Taub, S. J.: Sensitization Dermatoses of Nonfungous Nature, J. A. M. A. **98**:524 (Feb. 13) 1932.

hyperallergy. Sulzberger and Wise,[66] paraphrasing Bloch,[67] stated that "sensitization may become polyvalent." In this way a sensitization from within or from without may cause a patient to react to other drugs or substances of internal or of external origin. For instance, tinea infections, which often cause eczematous sensitizations to fungous products, may also cause sensitizations to drugs or to other substances in two ways: first, through the polyvalent broadening of the sensitivity to include drugs in addition to trichophytin, and second, through the injury to the skin caused by the process of tinea, which permits the penetration and intimate contact of applied medicaments and other substances. Such breaches of continuity of the epidermal covering and damage to the skin favor sensitization. Stokes and Kulchar[68] have also suggested that dermatomycosis may sensitize or exaggerate the allergic reactivity of the patient with arsphenamine dermatitis.

Osborne and Putnam,[69] summarizing the various factors in the coincidental occurrence of mycotic infections and occupational dermatoses, found that 32 of a total of 175 patients showing evidence of mycotic infection presented in addition a dermatitis due to allergy to some particular chemical. Frequently, an industrial dermatitis superimposed on a chronic mycotic infection in focal areas produces a marked flare-up of the mycotic dermatitis. Lane, in discussing Osborne and Putnam's paper, classified cases of dermatomycosis in industry as follows: (1) primary cases; (2) cases in which industrial factors contribute to the exaggeration of the fungous infection and increase the disability; (3) cases which start as true industrial dermatoses and are then complicated by a fungous infection; (4) cases in which the patients are sensitized by a fungous infection, and (5) cases in which there is no relationship between the industrial factors and the dermatomycosis. Weidman[70] in several instances has called attention to the fact that fungi can be deposited on the patient's skin as a result of contact with raw materials in industry. He has also shown in the laboratory that organisms can not only exist but even grow on leather. This fact has a clinical bearing,

66. Sulzberger, M. B., and Wise, F.: Drug Eruptions, Arch. Dermat. & Syph. **27**:549 (April) 1933.

67. Bloch, B.: Pathogenese des Ekzems, Arch. f. Dermat. u. Syph. **145**:34, 1924.

68. Stokes, J. H., and Kulchar, G. V.: The Infection-Allergic Complex in Arsphenamine Dermatitic Reactions, with Special Reference to Dermatophytosis, Brit. J. Dermat., to be published.

69. Osborne, E. D., and Putnam, E. D.: Industrial Dermatoses, J. A. M. A. **99**:972 (Sept. 17) 1932.

70. Weidman, F. D.: Ringworm Fungi, Pennsylvania M. J. **34**:695 (July) 1931.

as is evidenced by Henderson's [71] suggestion that shoes be fumigated with formaldehyde to prevent reinfection.

Just as dermatomycosis may predispose a patient to other sensitizations, leather dermatitis or trauma may predispose him to other types of sensitization. Stauffer cited the case of a man who had a dermatitis due to a leather jacket, following which he became sensitized to the materials to which he had been exposed in work that he had pursued without trouble for three and a half years. He also cited the case of a man who had been wearing a service cap for two years without injurious effects. A hatband dermatitis occurred for the first time after his forehead had been scratched by a pin in his cap. Patch tests with the leather from the cap were positive. The relationship of trauma to hatband dermatitis is suggested by the rubbing and irritation occasionally caused by a tightly fitting hat. Frei intimated that previous dermatitis due to any agent may leave the skin susceptible even to merely mechanical irritation.

Bloch has insisted that certain constitutional factors predispose to the development of a dermatitis. In dealing with occupational dermatoses, Mayer [72] noted that exogenous factors may become operative through apparently endogenous factors. Stokes, in dealing with the problem of eczema, has repeatedly stressed the multiple factor concept. Prosser White, Gardiner, O'Donovan [73] and others have stressed sweat secretions, seborrhea and ichthyosis as of major import. While sensitization to autogenous substances is noted only occasionally (Schürch [74]), Stauffer found that certain materials do not irritate unless mixed with sweat. In this connection, Levin and Silvers [75] have noted a lowering of the hydrogen ion concentration of the surface of the skin in acute and subacute eczematous conditions. Little need be said about the effects of diet in the production of dermatitis, but the experience of Sezáry, Lefevre and Rivoire,[76] who observed instances of dye dermatitis following overeating, suggests that an eczematous eruption of purely external origin may be influenced by diet.

My first case brings up the question of the influence of foci of infection on leather dermatitis. The evidence on this point is still divided,

71. Henderson, Y.: Fungous Infections of the Feet, Arch. Dermat. & Syph. **26**:710 (Oct.) 1932.

72. Mayer, L.: Das Gewerbeekzem, Berlin, Julius Springer, 1930.

73. O'Donovan, W. J.: Exogenic Dermatitis, Lancet **1**:1128 (May 28) 1927.

74. Schürch, O.: Reizversuche mit physiologischen Substanzen auf der Haut von Normalen und Ekzematieren, Klin. Wchnschr. **4**:11, 1925.

75. Levin, O. L., and Silvers, S. H.: The Reaction of the Skin and Its Secretions in Eczema, Arch. Dermat. & Syph. **25**:825 (May) 1932.

76. Sezáry, A.; Lefevre, P., and Rivoire: Allergic Dermatitis of the Neck from Contact with a Dyed Scarf, Bull. Soc. franç. de dermat. et syph. **37**:1316 (Dec.) 1930.

some authors having noted a relationship and others denying any influence of one condition on the other. Fordyce and MacKee [77] considered the knowledge of the relationship of such foci to diseases of the skin as still vague. Darier [78] stated that even in occupational eczema a distant septic focus may assist the external agent in the production of the eczematous state. Visher [79] has reported 5 cases of eczema apparently caused by foci of infection. Bruhns,[80] in cases of recurrent eczema, noted roentgenologically demonstrable granulomas of the teeth, which he considered capable of making the body more susceptible to other injurious substances and the removal of which led to healing of the previously resistant lesions. French [81] likewise was impressed with the striking relationship between dermatoses and foci of infection in the mouth. Gardiner noted that previous illness predisposes to occupational dermatoses, and Stokes [82] noted that a "focus of infection with pyogenic organisms does exercise a marked exaggerative effect on many eczemas." Stokes and Cathcart,[83] in their investigations of the causes of arsphenamine dermatitis, stated that chronic focal infections and acute intercurrent infections form a part of the background on which cutaneous reactions may develop. This experience has since been frequently confirmed by others. Ravitch and Steinberg,[84] on the other hand, were unable, in an extensive experience, to note any cases of eczema which were especially influenced by foci of infection.

Often the patient may be exposed to the offending substances for a long period before irritation occurs. This has been called by some the "incubation period" (Bloch and Steiner-Wourlisch [85]) and by others the "latent period" (Percival [86]). This phenomenon has been com-

77. Fordyce, J. A., and MacKee, G. M.: Diseases of the Oral Mucosa, Arch. Dermat. & Syph. **13**:601 (May) 1925.

78. Darier, J.: Etiologie et pathogénie de l'eczema, Tr. Internat. Cong. Dermat. & Syph., Copenhagen, 1930; Presse méd. **38**:1349 (Oct. 4) 1930.

79. Visher, J. W.: The Role of Focal Infection in the Etiology of Eczema, Am. J. M. Sc. **170**:723, 1925.

80. Bruhns, C.: Die Behandlung des chronischer Ekzem, Deutsche med. Wchnschr. **56**:773 and 818, 1930.

81. French, E.: Diseases of the Oral Mucosa and Teeth, Dent. Cosmos **75**:583, 1933.

82. Stokes, J. H.: The Complex of Eczema, J. A. M. A. **98**:1127 (April 2) 1932.

83. Stokes, J. H., and Cathcart, E. P.: Contributory Factors in Postarsphenamine Dermatitis, Arch. Dermat. & Syph. **7**:14 (Jan.) 1923.

84. Ravitch, M., and Steinberg, S. A.: Tr. Sect. Dermat. & Syph., A. M. A., 1918, p. 117.

85. Bloch, B., and Steiner-Wourlisch, A.: Die Sensibilisierung des Meerschweinchens gegen Primel, Arch. f. Dermat. u. Syph. **162**:349 (Dec. 18) 1930.

86. Percival, G. H.: Experimental Observations on Dermatitis Due to Dyed Fur, Lancet **2**:417 (Aug. 22) 1931.

mented on by many writers, and Roxborough [87] ascribed it to the gradual development of sensitiveness to the irritant, the development being slower if the intervals between the doses are long than if they are short. When once sensitized, patients react very quickly to the irritant, and the sensitiveness is not always confined to the area which has been in contact with the irritant previously. Cash [88] and later Low [89] have demonstrated this gradual sensitization. It is my opinion that the existence of the various factors mentioned plays an important part in conditioning the sensitization.

SUMMARY

The literature and the reported cases of leather dermatitis reveal a complex causal background in this condition.

The specific allergic factors in my cases were tanned leather (probably due to synthetic tanstuff) and (in 1 case) the vat dye. The literature cites examples of specific irritations to almost every substance used in leather manufacture.

Fungous infections probably predispose to leather dermatitis through polyvalent broadening of the sensitivity to include other materials in addition to trichophytin and through injury to the skin caused by the mycotic inflammatory process, facilitating the penetration of other irritating substances.

Conversely, an allergic (leather) dermatitis may predispose to or reactivate a fungous infection (case 2).

Focal infection may bring out a latent sensitivity or may help to maintain a leather dermatitis, but only temporary relief is secured by removal of the offending focus.

Clinical cases illustrating the interplay of multiple etiologic factors are cited.

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87. Roxborough, A. C.: Eighty-Six Cases of Dermatitis Due to Dyed Fur, Brit. J. Dermat. **37**:126, 1925.

88. Cash, J. T.: The Dermatitis Produced by East Indian Satin Wood ("Chloroxylon Swietenia"), Brit. M. J. **2**:784 (Oct. 7) 1911.

89. Low, C.: Skin Sensitizations to Nonbacterial Proteins and Toxins, Brit. J. Dermat. **36**:292 (July) 1924.

SULPHARSPHENAMINE IN THE TREATMENT OF WARTS

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The use of sulpharsphenamine injected intramuscularly in the treatment of warts was reported in October, 1926, by Sutton.[1] He noted that a crop of verrucae planae juveniles disappeared while a patient was being given the drug for another purpose. Subsequently he used it with uniform success in five other cases in which this type of wart occurred. In 1931, Osborne and Putnam [2] reported that of 40 patients whom they treated with this preparation, 20 were cured and 20 were not, but these investigators made no discrimination as to the type of verrucae under treatment. Accordingly, it was proposed by Dr. MacKee that an attempt be made to evaluate this form of therapy more accurately.

A series of patients was given sulpharsphenamine, dissolved in distilled water and injected intramuscularly into the gluteal muscles. The dosage ranged from 0.1 to 0.3 Gm., according to the age and the weight of the patient. A control series was subsequently started, distilled water which had been colored to match the sulpharsphenamine solution by admixture with a minute amount of tumeric and bismarck brown being used. This was filtered clear, sterilized and given in the same manner as the sulpharsphenamine solution. In order that the attitude of the observer might not affect the result, the patient was first examined, and either a certain dose of sulpharsphenamine or a placebo was ordered. The injection was then made from a syringe previously filled by an assistant; the operator did not know which of the two was being given. Separate records were kept, and only when the case was closed was it known by the operator whether sulpharsphenamine or the placebo was used. The patients were asked to report at intervals of two weeks, but the injection was not repeated more often than once a month. If there was no improvement a month after treatment and the patient

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1. Sutton, R. L.: Sulpharsphenamine in the Treatment of Warts, J. A. M. A. **87**:1127 (Oct. 2) 1926.

2. Osborne, E. D., and Putnam, E. D.: Treatment of Warts, Radiology **16**:340 (March) 1931.

refused to continue the course, the case was recorded as a failure. Only patients in whom the warts disappeared completely were considered as cured.

In all, 105 patients were treated with sulpharsphenamine and 120 with the placebo. It was possible to follow 80 of the former and 84 of the latter. Of the 80 patients treated with sulpharsphenamine, 42, or 52.5 per cent, were cured. Of the 84 treated with the placebo, 40, or 47.6 per cent, were cured.

Of these 164 patients, 116 had verruca vulgaris, 34 verruca plantaris and 17 verruca plana juvenilis. Two patients presented both verruca vulgaris and verruca plantaris, and 1 both verruca vulgaris and verruca plana juvenilis. Several patients with digitate and filiform warts of the bearded region and the scalp are considered here with those who showed verruca vulgaris. Of the 116 patients with verruca vulgaris, 55 were treated with sulpharsphenamine and 61 with the placebo; the result was cure in 25 (45.4 per cent) of the former and in 23 (37.7 per cent) of the latter. Of the 34 patients with verruca plantaris, 16 were treated with sulpharsphenamine and 18 with the placebo; the result was cure in 11 (68.8 per cent) of the former and in 13 (72.2 per cent) of the latter. Of the 17 patients with verruca plana juvenilis, 10 were treated with sulpharsphenamine and 7 with the placebo; there were cures in 7 (70 per cent) of the former and in 6 (85.7 per cent) of the latter.

By far the majority of the patients received only a single injection. Of the patients cured with sulpharsphenamine, only 2 received two injections and 2 received three. Of those cured with the placebo, 4 received two injections, and 1 received three.

Response was most often first noted in that the warts became drier and appeared shrunken. In the flat variety these symptoms were often associated with superficial scaling. In the common warts the keratotic top, if present, at first remained attached and later was exfoliated either gradually or *en masse*. In the verrucae plantares the first response was usually a decrease in the amount of pain reported by the patient. Here likewise at times the lesion appeared to dry out, and shortly afterward a firm, horny mass could be shelled out. Other plantar lesions, however, seemed to become granular and macerated, and exfoliation was more gradual. It would appear as though the exciting agent were somehow overcome, and that the cutis therefore refused to support the structure above it, whereupon the acanthotic portion of the epidermis was converted into dead keratotic material which was lost as promptly as its situation permitted.

As nearly as can be judged, involution had begun in 30 per cent of the cases by the end of the first week; improvement began to show in another 25 per cent during the second week, and in still another 25

per cent during the third and fourth weeks. In about 20 per cent, response apparently did not begin until the second month. To offset any of these last cases which might be considered spontaneous cures, no doubt in some of those which had been recorded as failures after one month's observation the patients would subsequently have lost their warts without further treatment.

The patients treated varied in age from 3 to 71 years. There was no great difference in the response noted in the various age groups, although the percentage of successful results was perhaps slightly higher in patients in the first two decades of life.

In administering the sulpharsphenamine, the drug was injected in various dilutions of from 0.75 to 5 cc. of distilled water. No appreciable difference was noted in the amount of pain experienced with the various dilutions. It was usual for the patients to complain of a stinging pain for from two to three hours and of stiffness in the gluteal muscles for from two to three days following the treatment. About 15 per cent complained of pain lasting for a week or more; in several cases it was severe enough to inhibit the usual activities. Five patients presented cutaneous eruptions in from three to ten days after the drug was administered. In 1 the eruption consisted of a localized, blotchy erythema in a palm-sized area about the site of the injection and a mild, generalized pruritus. The other 4 patients demonstrated a more generalized eruption consisting of smooth, slightly raised, irregular, brightly erythematous, isolated and confluent patches beginning on the arms and thighs and later involving the trunk. All of the patients complained of moderate itching. Two of the cases of eruption were associated with anorexia, headache and general malaise necessitating short periods of rest in bed. All of the lesions cleared within from one to three weeks without special treatment.

COMMENT

The fairly close agreement in the results obtained by the use of sulpharsphenamine and of a placebo given in the same manner appears to rule out any specific therapeutic effect of the drug in the therapy of warts.

It is interesting to note the similarity of these results to those reported by Bloch.[3] In a series of 179 patients, by means of suggestion alone, he was able to cure 44 per cent of those with verruca vulgaris and 88.4 per cent of those with verruca plana juvenilis.

The response of the plantar warts is perhaps the most striking of all and can be seen to compare favorably with the results reported by

3. Bloch, Bruno: Ueber die Heilung der Warzen durch Suggestion, Klin. Wchnschr. **6**:2271 (Nov. 26) and 2320 (Dec. 3) 1927.

MacKee,[4] Taussig and Miller,[5] Osborne and Putnam [2] and Michaels,[6] following treatment with roentgen rays. They place their figures variously at from 70 to 90 per cent of cures by this means.

Lurie [7] reported treating 34 patients with verruca vulgaris and verruca plantaris by the intramuscular injection of bismuth salicylate, with uniform success. Recently records were collected of 23 cases in which the patients were treated in this manner in Dr. MacKee's clinic and in the offices of several of its staff members. Of these, 9 presented common warts, 12 plantar warts and 2 the flat juvenile type. Cures occurred in 2, 7 and 2 cases, respectively, or, in all, in 11 of the 23. It is undoubtedly unfair to rate these last figures too highly, and reports of larger numbers of unselected cases in which bismuth salicylate was used are desirable.

No statistics are available as to the degree of efficiency of the other almost innumerable methods used in this field. It cannot be doubted, however, that at certain times and in certain hands each has given excellent results, and it is equally sure that at other times each has failed.

Altogether it seems entirely consistent with these considerations to question seriously if by any nondestructive means in use at present in the therapy of warts one is doing more than exercising the power of suggestion.

CONCLUSION

In the treatment of warts, sulpharsphenamine injected intramuscularly appears to have little, if any, advantage over distilled water given in like manner. Because of this and in view of the relatively frequent complications from the administration of the drug, it may be advisable to discontinue its use for this purpose.

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4. MacKee, G. M.: X-Rays and Radium in the Treatment of Diseases of the Skin, ed. 2, Philadelphia, Lea & Febiger, 1927.

5. Taussig, L. R., and Miller, H. E.: Roentgen and Radium Treatment of Verruca Plantaris, Am. J. Roentgenol. **20**:514 (Dec.) 1928.

6. Michaels, J. C.: Roentgen-Ray Treatment of Verruca Plantaris, Arch. Dermat. & Syph. **13**:658 (May) 1926.

7. Lurie, S. A.: Verrucae Vulgares (Palmar and Plantar), Arch. Dermat. & Syph. **26**:95 (July) 1932.

ACANTHOSIS NIGRICANS

A CASE OF THE BENIGN FORM IN AN ADULT INVESTIGATED FROM THE ASPECT OF ENDOCRINE DYSFUNCTION

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The case of acanthosis nigricans reported in this article occurred in a patient who was formerly under the care of one of us (H. J. S.) at the Memorial Hospital, New York, and who was transferred to the New York Hospital for study. At the latter institution work was directed particularly toward an investigation of the endocrine system in view of the hypotheses of Darier,[1] Pollitzer[2] and Porias[3] concerning the etiology of acanthosis nigricans. Frequent clinical observations were made and these were supplemented by the laboratory procedures which are described following the report of the case. These procedures are arranged under the heading of the organ studied.

REPORT OF CASE

History.—A. de G., a white housewife, aged 46, was admitted to the New York Hospital on Oct. 26, 1932, because of itching growths on the skin and growths in the mouth of two years' duration. She was discharged with the condition unimproved on November 12.

The family history revealed that the father had suffered from asthma and had died at the age of 78 of cancer of the rectum; the mother had died at the age of 66 of apoplexy, and one sister had "heart and kidney trouble." The patient had scarlet fever and measles in childhood and typhoid fever and influenza as an adult. She was married at the age of 28, and four years ago was deserted by her husband, who was addicted to alcohol.

Her past history revealed that she was subject to feelings of fulness on both sides of the neck associated with rapid pulsations in the same situations. She was also somewhat deaf in the left ear. There was mild dyspnea on moderate exertion, with occasional extrasystoles. She had had attacks of poor appetite, and there was occasional pain in the pit of stomach (she pointed to the epigastrium) with considerable gas and constipation. She attributed this to inability to chew food properly owing to the absence of all but four teeth, which were foul. There were

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1. Darier, J.: Ann. de dermat. et syph. **6**:97, 1895.
2. Pollitzer, Sigmund: Acanthosis Nigricans, J. A. M. A. **53**:1369 (Oct. 23) 1909.
3. Porias, Joseph: Wien. klin. Rundschau **27**:671, 1913.

occasional "bilious attacks" with nausea. At no time had there been hematemesis, blood in the stools or tarry stools. She had had some difficulty in the act of urination for several months (stopped and had to start again). There was no hematuria, nocturia, dysuria or frequency.

Menstruation began at the age of 16, but was not regular until the age of 18, since when it had been regular. The last menstrual period occurred one week before admission. Until marriage there was considerable dysmenorrhea. She had five pregnancies—one induced abortion at three months, three deliveries with instruments and one normal delivery. There were four children (ranging in age from 4 to 14 years), who were living and well. A fibroid was said to have been removed at the time of the delivery of the first child. At 16 years of age, at the time of the first menstruation, she had some pitting edema of the legs, ankles, thighs, face and back, which lasted intermittently for nine months until the next menstrual period, when it disappeared. There was considerable backache during the period of amenorrhea.

She supported herself and her children by keeping house for a physician. She did not use alcohol, tea, tobacco or drugs. Her diet was well balanced and sufficient, and her present weight of 139 pounds (63 Kg.) was only 4 pounds (1.8 Kg.) less than her usual weight.

Present Condition.—The patient was a well developed and well nourished intelligent woman of 46 years, whose general appearance was that of good health. The present illness began in the mouth three years before examination, about the time that a new dental plate was inserted. The throat was sore, and the patient noticed that the uvula and the anterior pillars of the fauces were symmetrically dark red; they had since become considerably lighter. The soreness of the throat lasted for about three months and did not recur. There was no swelling of the throat or any glandular enlargement at any time. Before soreness of the throat had completely disappeared a soft swelling arose inside the mouth close to its left angle. This was soon followed by a similar swelling symmetrically placed on the right side of the mouth. The swellings gradually increased in size, extending across the inner aspect of both lips and also backward along the line of the teeth. At the same time the roof of the mouth began to itch and felt rough. This roughness persisted, and during the past eighteen months had extended to include the gums. With the involvement of the gums the tongue gradually increased in size, but was not sore at any time.

About two and a half years ago the patient observed that the whole surface of her neck seemed to be dirty and that this "dirt" could not be removed by washing. The same brownish-black discoloration quickly appeared also in symmetrical areas in the axillae, on the flexor surfaces of elbows, under the breasts and in the popliteal spaces. The umbilical area, mons veneris, groins, vulva, perineum, natal cleft, legs and feet were soon afterward involved. Coarsening of the texture of the skin slowly developed in the affected regions, in which the sole subjective symptom of itching had recently appeared. The face was not involved.

Physical Examination.—The mouth showed a sharply delimited, dull red, symmetrical area covering the uvula, the anterior pillars of the fauces and an adjacent portion of buccal mucosa about 2 cm. wide and 4 cm. long; dilated blood vessels appeared on the surface of this area. There was no other pigmented area within the mouth. The hard and soft palates and the gums were studded with innumerable papules the size of a pinhead, and there was a raised, fissured, smooth plaque of mucosa extending from a point 3 cm. behind either angle of the mouth and crossing the midline on the buccal aspect of both lips. These plaques were raised

about 3 mm. above the buccal mucosa and were soft. The tongue was enlarged, red and devoid of fur and presented a fissured appearance in the anterior half, the line of the prominent fissures being from side to side; the papillae were especially prominent over the entire surface of the tongue.

The cutaneous picture was, in the main, identical with that of the published description of the disease and will not be recorded here. A few recent lesions, however, particularly on the scalp, neck and legs were nonpigmented and one of these, on the scalp, disappeared between November, 1932, and June, 1933. When it was first observed, hairs were growing freely through it.

The lesions on the feet differed from those elsewhere in that they consisted of a series of stiff, closely packed, nonpigmented, hyperkeratotic spines. The lesions on the feet involved both the plantar and the dorsal surfaces and, unlike the remaining lesions of the skin, were increasing rapidly in area.

The nails were dystrophic. The change in the nails had commenced with the onset of the present condition three years before and had slowly progressed. The nails were hard, reduced in size, brittle and irregularly thickened.

The hair of the scalp had always been coarse and dry. It had become increasingly brittle during the past three years, but this brittleness had been kept in check by the use of olive oil. There was abundant hair on the scalp. The pubic hair, axillary hair and eyebrows were scanty, and considerable hair had been lost from these regions since the onset of the disease.

A general physical examination revealed the following: The breasts were flaccid and pendulous, and no masses were palpable. The lungs were resonant: there were normal vesicular breath sounds, and no adventitious sounds were heard. The heart showed a regular rate and rhythm and no murmurs. While the patient was in the hospital the average pulse rate was 80 per minute, with a range of from 60 to 90. The pulse was not unusual in quality.

A roentgenogram of the heart and lungs taken at a distance of 7 feet showed a picture which was normal except for a moderate increase in the width of the supracardiac shadow.

The abdomen showed no masses, tenderness or rigidity; the liver and spleen were not palpable. The stomach and intestines were examined roentgenographically and showed a normal picture. This examination was repeated on June 26, 1933, with similar results.

An earlier roentgenographic examination of the alimentary tract at the Memorial Hospital also gave negative findings. A complete gynecologic examination revealed no abnormalities; it was repeated on June 28, 1933, with the same results.

An ophthalmologic examination was made. Vision in each eye was 20/20, with the poor near vision of presbyopia. The media were clear, and the fundi were normal.

A complete neurologic examination showed no pathologic changes. After the patient was discharged from the hospital, on Nov. 12, 1932, she was engaged in household duties until readmission at our request on June 21, 1933. She was of the opinion that her physical condition had deteriorated during the past six months, and she complained of fatigability, faintness, diminished appetite, more frequent abdominal pain and increase in the size of the cutaneous lesions. These symptoms appeared after an infection of the left foot, which arose in November, 1932, and lasted for one month; they were increased by an attack of erysipelas four weeks before admission. She found that her daily round of shopping was exhausting and that her legs below the knee tired easily. The feeling of faintness was not accom-

panied by loss of consciousness. Her appetite had diminished, and nothing appealed to her except fruit. There was occasional nausea but no vomiting. The movements of her bowels were irregular, constipation frequently alternating with a watery diarrhea of four or five daily movements. Blood or mucus had never been observed in the stool.

The abdominal pain began in the right upper quadrant and traveled over the entire abdomen. There was no radiation to the shoulder or back. The pain was of a sharp stabbing quality and lasted only a few seconds. It was unrelated to food and was unaffected by alkalis.

The cutaneous lesions on the feet had increased considerably in size without any change in appearance and had involved the soles to a large extent. The lesion on the scalp had disappeared without leaving a trace.

While the patient was in the hospital the course was uneventful. The movements of the bowels were regular, and the stools were well formed. There was no attack of abdominal pain, nor was there any faintness. The salt-poor diet was well taken and produced no symptoms; it was unaccompanied by the dramatic changes which follow deprivation of salt in cases of Addison's disease.[4]

She was discharged on June 29; the condition was unimproved. In spite of the absence of evidence of suprarenal involvement, she was provided with a suprarenal cortex extract and presented with instructions to receive four subcutaneous injections at three day intervals. Also, a diet high in vitamins, calories and salt was drawn up for her use, and she was further directed to consume with her meals at least 5 Gm. of additional salt daily.

The latest information was received from the patient on September 27, when she wrote that, in spite of strict adherence to these directions, the lesions on the feet were gradually getting worse and had extended to cover practically the whole of each foot. Her sleep was considerably impaired owing to the intense itching of the feet.

LABORATORY EXAMINATIONS

1. *The Suprarenal Glands.*—(*a*) Response of the Serum Sodium to a Salt-Free Diet: Loeb,[5] in three severe cases of Addison's disease, noted that there was a decrease in the total base of the blood, which occurred entirely at the expense of the sodium. After the administration of a suprarenal cortex extract and sodium chloride the patient became almost entirely free from symptoms, and the abnormalities of the blood practically disappeared.

Later, Harrop and his colleagues [4] showed that a relapse, with considerable decrease in the blood sodium, could be precipitated in Addison's disease by the withdrawal of sodium chloride from the diet for three days. Restoration of the sodium chloride caused an improvement of the symptoms and a return to normal value of the blood sodium within forty-eight hours. Harrop also found that a normal person showed no decrease in blood sodium after nine days of a diet in which the daily intake of sodium chloride was less than 1 Gm.

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4. Harrop, G. A.; Weinstein, A.; Soffer, L. J., and Trescher, J. H.: Diagnosis and Treatment of Addison's Disease, J. A. M. A. **100**:1850 (June 10) 1933.

5. Loeb, R. F.: Chemical Changes in Blood in Addison's Disease, Science **76**:420 (Nov. 4) 1932.

Our patient, who weighed 129 pounds (58.5 Kg.), was placed on a diet consisting of 203 Gm. of carbohydrate, 52 Gm. of protein and 93 Gm. of fat—1,860 calories—with a sodium chloride content of approximately 1 Gm. The serum sodium was determined on June 21, 1933, four hours before the inception of this diet, and was found to be 134.4 millimols per liter. A second determination on June 26 gave 137.8 millimols per liter. The serum sodium, therefore, had remained at the same normal level after five days of a salt-poor diet, during which the patient felt particularly well.

(*b*) Plasma Chlorides: This constituent of the blood, which is considerably diminished in Addison's disease, stood at the normal figure of 650 mg. per hundred cubic centimeters.

(*c*) Blood Pressure: This was determined daily in both arms. The systolic pressure varied between 98 and 114 mm. of mercury, and the diastolic pressure between 60 and 72. A determination in November, 1932, gave similar figures. The blood pressure, therefore, although low, had shown practically no change within the past seven months.

(*d*) The Goetsch Test: This is included for comparison with the results of other investigators, although we do not believe that the response of the blood pressure to an injection of epinephrnie is a measure of suprarenal efficiency. Such a test was performed in November, 1932, when it was found that the systolic blood pressure began to rise six minutes after that of a normal person who had received a similar dose of epinephrine; in addition, the maximum systolic blood pressure was recorded thirty-two minutes after injection into the normal person, whereas the rise in pressure was so gradual in the patient that a maximum was not reached until sixty-six minutes had elapsed. In the normal person the initial and maximum systolic pressures were 130 and 160 mm. of mercury, respectively, the corresponding figures for the patient being 100 and 125.

2. *The Pituitary Gland.*—The Presence of Anterior Pituitary-Like Substances in the Urine: A twenty-four hour specimen of urine was analyzed for the presence of the gonadotropic, thyrotropic and suprarenalotropic factors. This showed a diminution of the gonadotropic factor, with the other two factors within normal range. The methods used in this analysis were those of Evans [6] and Webster.[7]

3. *The Thyroid Gland.*—(*a*) Creatine in the Urine Before and After the Administration of Creatine: The work of Richardson, Wolff

6. Evans, H. M.; Simpson, M. E., and Austin, P. R.: The Hypophyseal Substance Giving Increased Gonadotropic Effects When Combined with Prolan, J. Exper. Med. **57**:897, 1933.

7. Webster, Bruce: Unpublished communication.

and Shorr [8] suggested that disturbances of creatine metabolism are frequently associated with thyroid dysfunction. Accordingly, a creatine tolerance test was performed by the oral administration of 1.32 Gm. of creatine, of which 25 per cent was excreted in the urine within the following twenty-four hours. This is within the normal range for women.

(*b*) The Basal Metabolic Rate: This was determined on two occasions, with the following results: in November, 1932, plus 6.1 per cent; in June, 1933, plus 8 per cent. The determination was made with the Benedict-Roth machine, and the results were calculated according to Aub-Du Bois standards.

4. *The Pancreas.*—A sugar tolerance test was performed in June, 1933, using 100 Gm. of dextrose. The following results were obtained: blood sugar during fasting, 0.074 per cent; one-half hour after ingestion, 0.101 per cent; one hour after ingestion, 0.11 per cent, and two hours after ingestion, 0.077 per cent. There was no glycosuria at any stage of the test. The new Benedict [9] method of blood sugar determination was used.

5. *The Liver.*—The icteric index was 7.5, and the blood clotting time 2.5 minutes. The blood fibrinogen was 0.00033 per cent. The blood cholesterol was 0.235 per cent.

6. *Other Examinations of the Blood.*—The total red cell count was 4,600,000, with a color index of 0.9. The total white cell count was 12,100; a differential count showed 56 per cent adult polymorphonuclears, 21 per cent immature polymorphonuclears, 13 per cent lymphocytes, 3 per cent monocytes, 6 per cent eosinophils and 1 per cent basophils.

The corrected sedimentation index was 1.18 (normal: from 0.15 to 0.35); the red cell volume was 38.7 per cent. The method of Rourke and Ernstene [10] was used in this test. The plasma carbon dioxide capacity was 50 volumes per cent. The total serum protein was 0.0084 per cent.

7. *Urine.*—All the examinations of the urine gave normal results, including an analysis for the presence of arsenic and mercury. Tyrosine and melanin were both absent from the urine.

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8. Richardson, H. B.; Wolff, H. G., and Shorr, E.: Unpublished communication.

9. Benedict, S. R.: Analysis of Whole Blood; Determination of Sugar and of Saccharoids (Nonfermentable Copper-Reducing Substances), J. Biol. Chem. **92**:141, 1931.

10. Rourke, M. D., and Ernstene, A. C.: Method for Correcting Erythrocyte Sedimentation Rate for Variations in Cell Volume Percentage of Blood, J. Clin. Investigation **8**:545, 1930.

8. *Tuberculin Test.*—Knowles and his colleagues [11] expressed the belief that the juvenile type of acanthosis nigricans is of tuberculous causation. Although no evidence for this etiology was found in our case, intradermal injections were made of tuberculin furnished by the New York Department of Health in quantities of from 0.0001 to 0.000001 Gm., with negative results. The thickness of the skin of the arms was especially noted while the intradermal injections were made, and this may afford an explanation of the negative result with 0.0001 Gm. of tuberculin, an amount to which most adults react.

9. *Biopsy Material.*—Biopsy was performed on one of the early nonpigmented hyperkeratotic lesions of the lower limbs. The tissue was stained with dioxyphenylalanine [12] to determine the presence of melanoblasts, the object being to ascertain whether the development of the cutaneous lesions was accompanied by a massing of these cells. No

Results of Fractional Analysis of Gastric Juice

	Free Acid	Total Acid per 100 Cc. of Gastric Juice
Gastric juice during fasting	None	2.3 cc. N/10 HCl
One-half hour after test meal	None	2.6 cc. N/10 HCl
One hour after test meal	None	2.4 cc. N/10 HCl
Histamine injected		
One-half hour after injection of histamine	None	2.5 cc. N/10 HCl
One hour after injection of histamine	None	3.5 cc. N/10 HCl

such massing existed, and, indeed, melanoblasts were very sparsely scattered through the preparation.

Sections of tissue removed from typical pigmented papillary lesions showed the usual histologic picture associated with this disease.

10. *Fractional Gastric Analysis.*—This was performed on July 24, 1933, using a meal of 35 cc. of 7 per cent alcohol in water. At the end of one and one-half hours 1 cc. of histamine phosphate in a dilution of 1:1,000 was injected subcutaneously, and additional samples of gastric juice were withdrawn for a further period of one hour. The results are given in the table.

COMMENT

In the absence of evidence of a malignant process, we believe this to be a case of juvenile acanthosis nigricans in an adult. The positive clinical symptoms, other than the cutaneous picture, are feelings of faintness, fatigability, vague epigastric pains, loss of appetite and a loss of weight of 10 pounds (4.5 Kg.) within seven months. Laboratory

11. Knowles, F. C.; Sidlick, D. M., and Ludy, J. B.: Acanthosis Nigricans; Adult and Juvenile Types, Arch. Dermat. & Syph. **19**:391 (March) 1929.

12. Bloch, B.: Das Pigment, in Jadassohn, J.: Handbuch der Haut- und Geschlechtskrankheiten, Berlin, Julius Springer, 1927, vol. 1, pt. 1.

examinations revealed a low blood pressure, a high sedimentation rate of the red blood cells and complete achlorhydria. The sedimentation rate is a nonspecific test which, when the value is increased, simply indicates that there is some pathologic condition in the body; the specificity is of the same order as that of the body temperature or the blood count. The high rate in this case can be accounted for by the presence of a certain amount of fissuring and infection at the base of the overgrown papillae of the axillae, groins and feet or by the condition of the teeth. The weakness complained of may well be ascribed to the low blood pressure, and this in turn may follow the exceedingly poor dentition which prevents the patient from having any but the softest foods. It is true that there was a diminution of the gonadotropic factor of the anterior pituitary-like substances of the urine, but this can be accounted for by the approaching menopause.

There is thus, in our case, no definite evidence of involvement of any part of the endocrine system. A survey of the literature shows that none of the cases of acanthosis nigricans associated with malignant disease and only a few of the juvenile cases have been investigated from an endocrine standpoint. Wieder,[13] Knowles and his colleagues [11] and Burgess [14] reported four well studied cases of the juvenile form of the disease. The findings which have been regarded by these authors as evidence, actual or suggestive, of endocrine dysfunction in these cases are as follows:

Case 1 (Wieder).—In a girl, aged 13, examination revealed the following: (*a*) hypo-acidity of the gastric content (figures not stated), (*b*) increased sugar tolerance, (*c*) prolonged action of epinephrine, (*d*) a low basal metabolic rate of minus 6 per cent, (*e*) a low pulse rate with an average of 80 per minute and (*f*) cessation of the menses during hospitalization (duration not stated).

Case 2 (Knowles and colleagues).—A man, aged about 58, had a low blood pressure of 118 systolic and 86 diastolic. (The patient was suffering from secondary anemia.)

Case 3 (Knowles and colleagues).—In a girl, aged 13, all findings relating to the endocrine system were approximately normal. (There was, however, no free hydrochloric acid in the gastric content.)

Case 4 (Burgess).—The patient was a woman, aged 58. "With the exception of the test meal [which showed a low total acidity and no free hydrochloric acid] all investigations directed towards the discovery of any associated disease were negative."

The only constant finding in all these cases is hypo-acidity of the gastric content, and it is possible that this may be significant in acan-

13. Wieder, L. M.: Acanthosis Nigricans, Juvenile Type, J. A. M. A. **87**:1964 (Dec. 11) 1926.

14. Burgess, Norman: A Case of Acanthosis Nigricans, Brit. J. Dermat. **43**: 169, 1931.

thosis nigricans, although Bennett and Ryle[15] showed that 4 per cent of normal persons have no free hydrochloric acid in their gastric juice. There is no apparent connection between the acidity of the gastric content and the endocrine system.

The "increased sugar tolerance" in Wieder's case is so slight as to be almost within the range of normal. The figures quoted for the basal metabolic and pulse rates in the same case are normal, and the cessation of menstruation in a homesick girl of 13 during the period of hospitalization is scant evidence of ovarian dysfunction.

We believe that there is as yet no support for the hypothesis of endocrine dysfunction as an etiologic or concomitant agent in juvenile acanthosis nigricans. If, therefore, juvenile acanthosis nigricans cannot be linked with the endocrine system, we must either consider the form associated with a malignant process to be a different disease or we must abandon the hypothesis of endocrine dysfunction in both forms of the disease. As the clinical and histologic picture of acanthosis nigricans is the same in all cases, regardless of the age of onset or of the presence or absence of a malignant process, we prefer to regard the disease as a single entity and to view as unfounded the hypothesis of endocrine dysfunction as an etiologic agent in acanthosis nigricans.

15. Bennett, T. I., and Ryle, J. A.: Guy's Hosp. Rep. **71**:286, 1921.

THROMBOPENIA IN ACUTE DISSEMINATED LUPUS ERYTHEMATOSUS

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Instances of the extremely acute, frequently fatal exanthematic type of lupus erythematosus are seen so infrequently by one observer that I feel justified in reporting my hematologic finding in three such cases. This consisted of marked thrombopenia. In case 1 the thrombocytes varied in number somewhat in proportion to the clinical condition of the patient. During periods of clinical improvement the thrombocytes increased, only to decrease again when the patient became worse. In the two fatal cases the thrombocytes reached a low point before death.

REPORT OF CASES

CASE 1.—Mrs. M. E., aged 28, first noted violaceous macules and papules on her finger-tips in 1929. Since that time they had appeared and disappeared intermittently. On June 1, 1932, her face was sunburned. The burn failed to disappear and gradually spread, involving the whole face and neck. Since the onset of this acute phase she had suffered from arthritic pains. The patient had had no illness prior to the onset of the present eruption, and there were no known foci of infection except endocervicitis.

Examination revealed typical atrophic patches of lupus erythematosus on the finger-tips and acute edematous dermatitis on the face and neck. This condition was diagnosed as the erysipelas perstans faciei phase of acute lupus erythematosus. The temperature was 100 F. The patient was admitted to the hospital on Sept. 13, 1932.

On September 14 a fine petechial eruption appeared on the chest and back. This eruption gradually progressed during the illness until, prior to death, it had become a rather generalized macular purpuric eruption. On September 14 the blood count was: leukocytes 2,050; polymorphonuclears, 62 per cent; lymphocytes, 35 per cent; large mononuclears, 1 per cent; myelocytes, 2 per cent, and thrombocytes, 110,000. A physical examination by Dr. William Strietmann revealed no evidence of pulmonary tuberculosis. He noted a systolic cardiac murmur and also called attention to facial twitchings and lethargy which he attributed to cerebral edema. A petechial enanthema on the palate was also noted. A blood culture was sterile. No tubercle bacilli could be found in the sputum. The roentgenologist reported "minimal pulmonary tuberculosis of both upper lobes." (This was not substantiated at autopsy.) Therapy consisted of administration of dextrose or magnesium sulphate intravenously to combat the cerebral edema.

From September 14 to 18 the temperature ranged from 102 to 104 F. The patient complained of pains in the joints. The total white cell count fell to 2,900.

On September 19 the patient received 500 cc. of whole blood by transfusion. The next day the white cell count increased to 4,450, but the thrombocytes fell to 81,000. At the same time it was noted that the petechial eruption was becoming more generalized. The entire buccal mucosa, palate and pharynx were petechial and edematous. On September 24 two injections of pentonucleotide were given, but the reaction was so severe that it was discontinued in favor of a hemostatic preparation which was given daily until death. Another transfusion of 500 cc. of whole blood was given on September 26. The next day the thrombocytes numbered 100,000. There was a moderate improvement in the facial edema, eruption and mental reactions from September 27 to October 2, during which time the temperature ranged from 99 to 100 F. The thrombocytes numbered 100,000. On October 4 the temperature began to rise, the thrombocytes dropped to 70,000, and the general condition became worse. The patient lapsed into unconsciousness and died on October 7.

Autopsy revealed: acute myocardial degeneration with dilatation on the right side; acute bilateral pulmonary edema; toxic hepatitis; nephrosclerosis; toxic ileus; marked aplasia of the bone marrow, and lupus erythematosus of the skin. There was no evidence of pulmonary tuberculosis.

CASE 2.[1]—A woman was admitted to the Klinik Kerl in June, 1933, because of a bat-wing area of acute dermatosis of the face. This was typical acute edematous lupus erythematosus, but the edema was not as intense as in case 1. When the patient first entered the hospital she was not particularly ill. However, the eruption spread rapidly over the neck, chest, back, hands and lower portion of the legs. The eruption consisted of pinkish violaceous macules ranging in size from that of a pinhead to that of a fingernail. No vesicles or bullae were present. With the spreading of the eruption fever appeared and varied from 101 to 103 F. until death. A persistent and severe cough was present. Examination by a competent internist failed to disclose definite pulmonary disease. Examinations of the sputum for tubercle bacilli showed negative results, and blood cultures were sterile. It was impossible to obtain a thrombocyte count until two days before death; at that time they numbered 50,000.

The patient failed rapidly and died on July 8. An autopsy showed pneumococcic empyema and tuberculosis of the spleen.

CASE 3.[2]—Mrs. A. L., aged 35, entered the hospital because of an acute exacerbation of lupus erythematosus of the face of three years' duration. There was a history of tuberculosis in the mother. The patient had had no serious illness prior to the onset of the eruption. For two months prior to entry she had complained of pains in the joints. During this time she was being treated in the outpatient clinic with a gold salt of alpha allyl-beta-4-carboxyphenyl thiourea for facial lupus erythematosus. About four weeks before hospitalization she noted an eruption on both hands and, during the previous two weeks, an acute swelling of the whole face, especially around the nose and eyes.

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1. Through the courtesy of Professor Kerl and Docent Urbach, of the University of Vienna, I was permitted to observe this patient throughout the course of her illness.

2. At the clinic of Prof. Leo Kumer at the University of Innsbruck, Austria, I was shown this typical case of an acute exacerbation of lupus erythematosus.

When I saw the patient she presented extreme edema of the eyes, nose and face resembling erysipelas. The remains of an old facial lupus erythematosus could be seen. There were many papular efflorescences on the hands and wrists. The patient appeared to be toxic and quite ill.

The blood count was: hemoglobin, 96 per cent; red cells, 4,040,000; white cells, 5,600; polymorphonuclears, 73 per cent; lymphocytes, 15 per cent; monocytes, 2 per cent, and eosinophils, 1 per cent. A determination of the thrombocytes showed the count to be 121,000. The patient left the hospital and was lost to further observation.

CONCLUSION

Thrombopenia was observed in three cases of acute disseminated lupus erythematosus. Further observation of this condition is indicated.

LEUKONYCHIA AND "COLDS"

SECONDARY TO DISTURBANCES OF METABOLISM

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In the course of researches on conditions of the upper respiratory tract generally termed "catarrh" or "colds" we were impressed by the frequent coincidence of transverse linear streaking of the nails or leukonychia. On studying the series of cases showing these coincident conditions we discovered that the infections of the upper respiratory tract were of much the same type. For the most part they were stubborn cases of rhinitis, nasopharyngitis and tonsillitis which were seldom free from nasal discharge, and in which the condition was seldom accompanied by febrile disturbances except during periods of acute exacerbation or complications. When the tonsils were present, they were generally hypertrophied, and the crypts were filled with grumous concretions. Many of these patients stated that they were seldom or never free from colds over periods of months or years. The majority of the cases occurred in the age groups between 5 and 40 years, though the condition was found in an infant aged 2 months. The group in which the highest incidence of leukonychia was found was the puberty and prepuberty group.

On close follow-up of the cases it was found that the white transverse streaks developed particularly prominently from two to four weeks after an acute exacerbation of the respiratory condition. As it takes about that length of time for the nail to grow out sufficiently for the streaks to become evident, it seemed apparent that the condition of the upper respiratory tracts and the leukonychia were of common origin. The nails of many of the patients also presented irregular white patches of leukonychia; the development of these appeared to coincide with the intervals between acute exacerbations.

A study of the possible etiologic factor underlying these coincidences revealed one constant finding—a diet high in carbohydrate. Among school children, in the course of routine school examinations the coincidence of "colds" and leukonychia was most frequently noted among the Italian children, who stated that their diet was rich in spaghetti and other starchy foods. Fondness for sweets was also frequently admitted by these patients.

Surmising that such a diet might possibly lead to a shift of the acid-alkali balance in the direction of alkalosis, we gave to a series

of these patients large doses of ammonium chloride, from 90 to 180 grains (5.85 to 11.7 Gm.) per day, in enteric coated capsules. On this therapy, the "colds" cleared up, and the formation of leukonychia was arrested. In another series of cases the diet was altered in the direction of an acid residue diet. The results were not so uniformly successful; in several of the cases it was necessary to administer in addition small doses of ammonium chloride to secure the desired result.

Several interesting findings might be noted in this preliminary report. The women of this series stated that they had scant though regular menses, sometimes accompanied by pain. Under the ammonium chloride therapy the periods became more prolonged. When the dosage of ammonium chloride was increased or when the drug was administered over a prolonged period of time, so that toxic effects in the nature of mild acidosis were produced, amenorrhea developed. Administration of large doses of sodium bicarbonate was promptly followed by the occurrence of the period, in one case in less than two hours. Continued administration of the ammonium chloride resulted in further delay of the period and in the eventual development of a purulent condition of the upper respiratory tract of a totally different nature from the original catarrhal condition. Stopping the administration of ammonium chloride in these cases was eventually followed by the reappearance of the initial condition.

The exact nature of the disturbance of metabolism underlying this condition is under study. Some light is thrown on its possible nature by a study of the data at hand on the action of ammonium chloride and on the effects of disturbances of ovarian function on mineral metabolism as well as by examination of the accumulating data on the metabolic origin of certain conditions of the upper respiratory tract.

Jarvis, Babbitt, Myerson, Paton [1] and others have noted that conditions of the upper respiratory tract are induced by shifts in the acid-alkali balance. Haldane [2] and others have shown that acidosis may be produced by the administration of ammonium chloride which in the tissues liberates hydrochloric acid by the following process:

$$2NH_4Cl + CO_2 = (NH_2)_2\,CO + 2HCl + H_2O$$

It is generally agreed that, as Cantarow stated,[3] "the condition of acid-base equilibrium unquestionably is a factor in determining the degree of ionization of serum calcium." Wenner [4] has shown that the precipitation of calcium on the mucous membranes of the nose and

1. Paton, J. H. P.: Brit. M. J. **1**:738 (April 29) 1933.

2. Haldane, J. B. S.; Hill, R., and Luck, J. M.: J. Physiol. **57**:301 (June) 1923.

3. Cantarow, Abraham: Calcium Metabolism and Calcium Therapy, Philadelphia, Lea & Febiger, 1933, p. 69.

4. Wenner, W. F.: J. Lab. & Clin. Med. **16**:341 (Jan.) 1931.

sinuses by an aqueous solution of sodium alizarin sulphonate and other substances combining with calcium results in the disappearance of the cilia of the epithelium, stagnation and infection. By administration of extract of the suprarenal cortex, which has been shown by Pfiffner, Swingle and others to affect the alkali reserve,[5] Wenner was able to clear up the sinusitis thus induced in rabbits[6] by precipitation of calcium on the mucous membranes. Aub and others have shown that ammonium chloride induces an increased excretion of calcium.[7] The effect of ovarian hypofunction and hyperfunction on the calcium content of bones and on ossification is well recognized.

An a priori consideration of data offered by the literature would lead one to suspect that a disturbance of calcium metabolism might play an important rôle in the condition described. Only the cases which presented a relatively low blood calcium before the administration of ammonium chloride showed a relative increase after its administration and the clearing up of the symptoms. In one case the increase in total blood calcium amounted to 21 per cent though both the low and the high figures were within the normal range. No effort has been made to determine the changes in ionized calcium during treatment. Further studies are under way.

SUMMARY

Persistent "catarrhal" conditions of the upper respiratory tract, leukonychia and other manifestations were determined to be symptomatic of a constitutional metabolic disorder which responds to high doses of ammonium chloride and to other substances which effect a shift of the acid-base balance in the direction of acidosis.

993 Park Avenue.

120 West Fifty-Eighth Street

5. Swingle, W. W., et al.: Science **77**:58, 1933.

6. Wenner, W. F.: Effect of Extract of Suprarenal Cortex on Maxillary Sinusitis in the Rabbit, Arch. Otolaryng. **17**:774 (June) 1933.

7. Aub, J. C.; Bauer, W.; Heath, C., and Ropes, M.: J. Clin. Investigation **7**:97 (April) 1929.

ACNE IN ONE OF IDENTICAL TWINS

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As a matter of genetic interest, it may be worth while to record the occurrence of acne in one identical twin and not in the other. The patient, a young woman, aged 23, had a mild acne of several months' duration. It is perhaps significant that she had not had it during adolescence when the hereditary qualities of the skin seem to be most important in its production.

She was accompanied by her twin sister, who was physically identical, even to the point of having the same impacted wisdom tooth on the same side. The teeth of the twins, however, are not identical in all respects. The teeth of the second sister are straighter, and she has always required less dentistry than her sister with acne. In other respects the two are physically the same; their hands and feet, stature, eyes, hair and complexion are the same, and they are apparently identical in disposition; one does not dominate the other, as frequently happens in identical twins. They live together, eat and like the same foods, have the same activities, use the same cosmetics and are entirely alike in good health except for the slight acne.

Acne occurring in the one twin and not in the other is out of accord with the view which we, along with many other dermatologists, hold of the importance of hereditary factors in the structures of the skin that have a part in the production of acne vulgaris, although the slight variation in structure that would be a predisposing factor for the production of acne in one of these twins would be analogous to the slight difference in teeth between the two.

7 West Madison Street.

THE LIPID PARTITION AND THE ALBUMIN-GLOBULIN RATIO IN SYPHILIS

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AND

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NEW YORK

These investigations are a continuation of our previous studies on the lipids in the blood in syphilis. Our former work was carried out on the whole blood of the patient, whereas in this series the analyses were made on the blood serum, and in order to obtain a more complete picture of the biochemical findings, we included the determination of the albumin-globulin ratio on each specimen. The reason for this change to the blood serum lay in our desire to study the relationship of the lipids, albumin and globulin to the Wassermann reaction, other workers on this problem having claimed that examination of the serum was more accurate than that of the whole blood. Analyses were made of the total lipids, total cholesterol, cholesterol esters, free cholesterol, percentage of free cholesterol, lecithin, albumin and globulin.

The accompanying tables and charts give summaries of the data obtained in our investigations; however, we should like to emphasize one or two points in connection with them. Although the total number of patients investigated is small, namely, forty, attention is directed to the fact that repeated determinations were made for the vast majority of them, for some as many as from ten to thirteen. This was done to furnish an accurate record of the lipid, globulin and albumin content of the blood serum at the time the patient came under observation and throughout his treatment in order to note the range of values and the influence of therapy. Before proceeding with the pathologic cases we undertook to establish the average normal values in healthy subjects, of whom there were twenty-four.

Up to the present our investigations have not yielded sufficiently definite or uniform results to enable us to make positive statements regarding the nature of the Wassermann reaction or the relationship of a disturbed lipid-albumin-globulin balance to the processes of immunity in

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Read before the Section on Dermatology and Syphilology at the Eighty-Fourth Annual Session of the American Medical Association, Milwaukee, June 15, 1933.

From the Department of Dermatology and Syphilology, New York Post-Graduate Medical School and Hospital, Columbia University.

syphilis. We feel, however, that some of the results are suggestive and sufficiently encouraging to warrant a continuance of the studies in the hope that when a larger number of cases have been investigated more conclusive evidence will be forthcoming.

TECHNIC

The methods used are, in general, those employed in our previous publications.[1] For albumin and globulin, the procedure was that of Greenberg, the ratio between tyrosine and protein being employed.[2]

RESULTS

To obtain a representative picture of the serum of each patient, we repeated the analyses as many times as was possible. Table 1 summarizes the number of returns of our patients. In all, 1,218 analyses were made: 172 for total lipids, 175 for total cholesterol, 174 each for

TABLE 1.—*Summary of Number of Analyses*

Serum	Total Number of Analyses	Number of Times Analyses Were Carried Out on Same Patient											
		1	2	3	4	5	6	7	8	9	10	11	12	13
Lipids														
Total	172	17	3	..	2	4	7	3	2	1	2	..	..	1
Cholesterol (total)	175	14	6	..	2	4	7	3	2	1	2	..	..	1
Cholesterol (esters)	174	14	6	..	2	4	7	3	2	1	2	..	1	..
Cholesterol (free)	174	14	6	..	2	4	7	3	2	1	2	..	1	..
Cholesterol (free,%)	174	14	6	..	2	4	7	3	2	1	2	..	1	..
Lecithin	173	13	4	..	2	4	7	3	2	1	2	..	..	1
Proteins														
Albumin	175	14	6	..	2	4	7	3	2	1	2	..	..	1
Globulin	175	14	6	..	2	4	7	3	2	1	2	..	..	1

cholesterol esters and free cholesterol, 173 for lecithin and 175 each for albumin and globulin. Summaries of the details are given in tables 1 to 3 and in charts 1 to 8. They suggest some interesting findings.

1. Normal values were determined for the total lipids, total cholesterol, cholesterol esters, free cholesterol, lecithin, albumin and globulin of the serum. The subjects ranged from 19 to 24 years of age, and were selected from the students and staff of interns of the Guggenheim Dental Clinic.

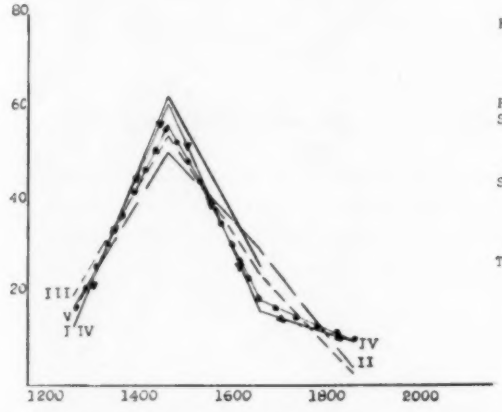
2. The average values listed in table 2 show a slight but definite increase in the total lipid as the disease advances from the primary to the tertiary stage. In chart 1, all of the peaks fall between 1,400 and 1,600 mg., but curves *I* and *II*, representing primary and primary-

1. Rosen, I.; Krasnow, F., and Lyons, M. A.: Cholesterol and Lecithin Studies in Syphilis: Cholesterol Partition in Relation to the Wassermann Reaction, Arch. Dermat. & Syph. **27**:383 (March) 1933.

2. Greenberg, D. M.: Colorimetric Determination of Serum Protein, J. Biol. Chem. **82**:545, 1929.

secondary syphilis, indicate a lower incidence of the higher values than do curves *III* and *IV*. The figures of table 3 demonstrate the same tendency; the percentage of values below the normal range is greatest for the primary cases.

3. As we have previously established for whole blood,[3] the average value for the total cholesterol of the serum in patients affected with primary syphilis is lower than that in persons suffering from any of the other degrees of infection. However, the difference obtained in the present investigation is less, probably because some of our cases were of the late primary type. This finding is further substantiated in table 3, which shows a greater percentage of analyses with total cholesterol



	Mg.	No.	%
Normal	1200–1399	3	12.5
	1400–1599	15	62.5
	1600–1799	6	25
Primary	1200–1399	4	16.7
	1400–1499	12	50
	1600–1799	7	29
	1800–1999	1	4
Primary-Secondary	1200–1399	13	19.4
	1400–1499	36	53.8
	1600–1799	16	23.9
	1800–1999	2	2.9
Secondary	1200–1399	4	12.9
	1400–1599	19	61
	1600–1799	5	16
	1800–1999	3	9.6
Tertiary	1200–1399	8	16
	1400–1599	28	56
	1600–1799	9	18
	1800–1999	5	10

Chart 1.—Curves showing the frequency of occurrence of values for total lipids for normal persons and for patients with different types of syphilis: *I*, normal persons; *II*, primary syphilis; *III*, primary-secondary syphilis; *IV*, secondary syphilis, and *V*, tertiary syphilis. The vertical scale represents the percentage of determinations, and the horizontal scale, the number of milligrams of total lipids per hundred cubic centimeters of serum.

below normal for primary syphilis than for any of the other stages of the disease. Again, curve *II* of chart 2 presents its peak between 140 and 180 mg. of cholesterol, whereas in the other curves it is between 180 and 220.

4. From tables 2 and 3, we note also that there is a steady rise in the total cholesterol of serum with the age of the disease, the result corresponding to that for total cholesterol in the whole blood.[3]

3. Rosen, I., and Krasnow, F.: Cholesterol Studies in Syphilis, Arch. Dermat. & Syph. **20**:75 (July) 1929. Rosen, Krasnow and Lyons.[1]

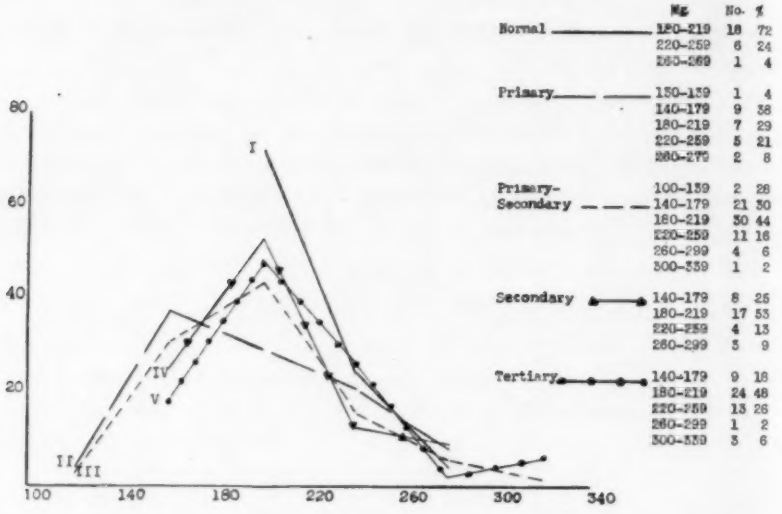


Chart 2.—Curves showing the frequency of occurrence of cholesterol values for normal persons and for patients with different types of syphilis: *I*, normal persons; *II*, primary syphilis; *III*, primary-secondary syphilis; *IV*, secondary syphilis, and *V*, tertiary syphilis. The vertical scale represents the percentage of determinations, and the horizontal scale, the milligrams of total cholesterol per hundred cubic centimeters of serum.

TABLE 2.—*Summary of Results of Analyses* *

Description of Cases	Number of Determinations	Total Lipids	Cholesterol				Lecithin	Protein, per Cent	
			Total	Ester	Free Amount	Free Per Cent		Albumin	Globulin
Normal	25	1,510 ± 91	212 ± 18	152 ± 19	59 ± 6	28 ± 4	221 ± 18	4.8 ± 0.3	2.6 ± 0.1
Primary syphilis	24	1,501 ± 103	194 ± 34	137 ± 28	57 ± 13	29 ± 6	188 ± 22	4.6 ± 0.2	2.5 ± 0.1
Primary-secondary syphilis	68	1,507 ± 113	197 ± 28	141 ± 72	56 ± 17	28 ± 7	194 ± 20	4.7 ± 0.3	2.7 ± 0.3
Secondary syphilis	32	1,544 ± 100	202 ± 29	152 ± 25	57 ± 8	28 ± 5	197 ± 23	4.6 ± 0.3	2.5 ± 0.3
Tertiary syphilis	50	1,555 ± 115	212 ± 35	157 ± 33	55 ± 15	26 ± 7	204 ± 27	4.6 ± 0.3	2.7 ± 0.3

* Values are expressed in milligrams per hundred cubic centimeters of serum.

TABLE 3.—*Distribution of Values with Reference to Normal Range*

Serum Analysis	Type of Syphilis	Number of Determinations	Percentage of Determinations Showing Values		
			Below Normal Range	Within Normal Range	Above Normal Range
Total lipids	Primary	24	29	50	21
	Primary-secondary	67	27	49	24
	Secondary	31	13	65	23
	Tertiary	50	20	54	26
Cholesterol (total)	Primary	24	58	25	17
	Primary-secondary	69	52	30	17
	Secondary	32	41	47	13
	Tertiary	50	36	44	20
Cholesterol (esters)	Primary	24	54	38	8
	Primary-secondary	68	46	38	16
	Secondary	32	34	47	19
	Tertiary	50	26	38	36
Cholesterol (free amount)	Primary	24	38	33	30
	Primary-secondary	68	38	40	19
	Secondary	32	28	59	13
	Tertiary	50	36	44	20
Cholesterol (free per cent)	Primary	24	25	33	42
	Primary-secondary	68	28	38	34
	Secondary	32	25	47	28
	Tertiary	50	26	44	30
Lecithin	Primary	24	58	30	13
	Primary-secondary	67	66	31	3
	Secondary	32	66	31	3
	Tertiary	50	52	34	14
Albumin	Primary	24	17	80	4
	Primary-secondary	69	22	70	10
	Secondary	32	31	60	3
	Tertiary	50	32	66	2
Globulin	Primary	24	21	62	17
	Primary-secondary	69	16	51	35
	Secondary	32	34	41	25
	Tertiary	50	16	38	46

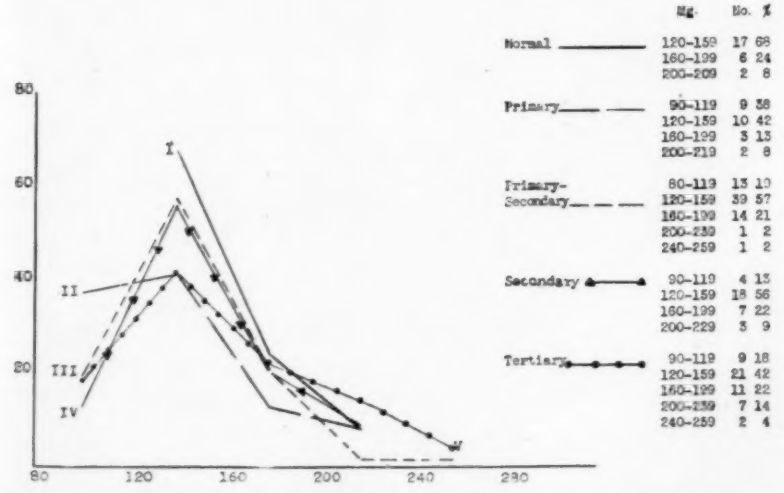


Chart 3.—Curves showing the frequency of occurrence of cholesterol-ester values for normal persons and for patients with different types of syphilis: *I*, normal persons; *II*, primary syphilis; *III*, primary-secondary syphilis; *IV*, secondary syphilis; *V*, tertiary syphilis. The vertical scale represents the percentage of determinations, and the horizontal scale, the number of milligrams of cholesterol-esters per hundred cubic centimeters of serum.

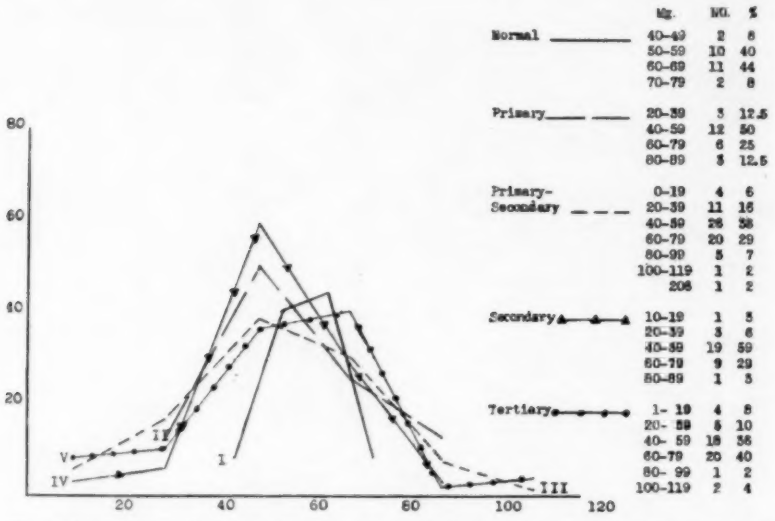


Chart 4.—Curves showing the frequency of occurrence of free cholesterol values for normal persons and for patients with different types of syphilis: *I*, normal persons; *II*, primary syphilis *III*, primary-secondary syphilis; *IV*, secondary syphilis, and *V*, tertiary syphilis. The vertical scale represents the percentage of determinations, and the horizontal scale, the number of milligrams of free cholesterol per hundred cubic centimeters of serum.

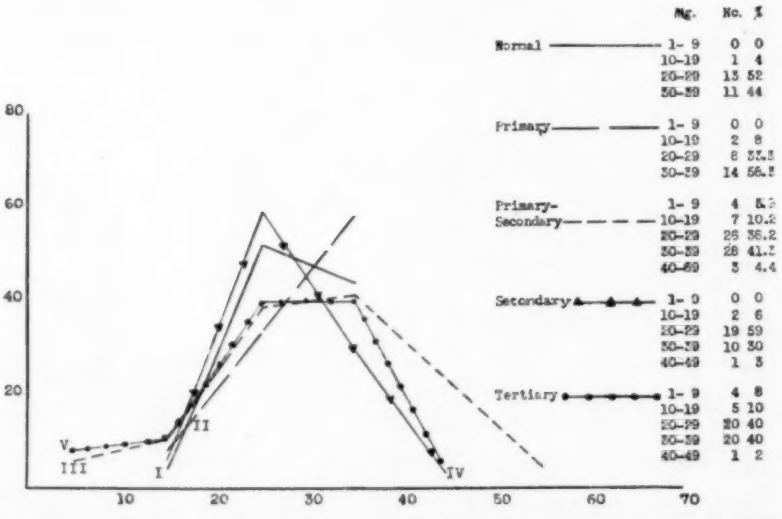


Chart 5.—Curves showing the frequency of occurrence of percentages of free cholesterol for normal persons and for patients with different types of syphilis: *I*, normal persons; *II*, primary syphilis; *III*, primary-secondary syphilis; *IV*, secondary syphilis; *V*, tertiary syphilis. The vertical scale represents the percentage of determinations, and the horizontal scale, the percentage of free cholesterol.

5. The results of the analyses for cholesterol esters follow very closely those for total cholesterol. There is a similar gradation in the values listed in tables 2 and 3. Chart 3 shows the greatest percentage of values between 80 and 120 mg. for primary syphilis.

6. Free cholesterol seems to vary only slightly from the normal; the lowest average content was obtained for tertiary and the highest for primary syphilis. The range in values is markedly greater than for normal subjects. This is clearly demonstrated in charts 4 and 5; the span for the normal curve extends from 40 to 80 mg. or from 10 to 40 per cent, whereas the span of the corresponding curves for our patients is from 0 to 120 mg. or from 0 to 60 per cent.

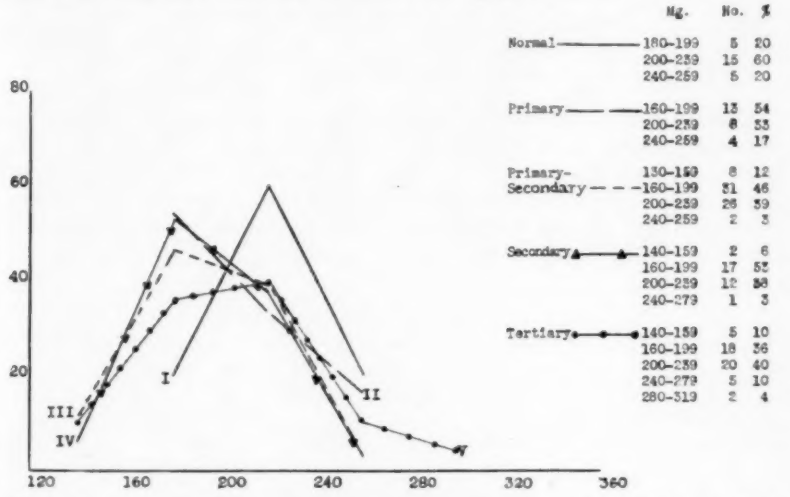


Chart 6.—Curves showing the frequency of occurrence of lecithin values for normal persons and for patients with different types of syphilis: *I*, normal persons; *II*, primary syphilis; *III*, primary-secondary syphilis; *IV*, secondary syphilis; *V*, tertiary syphilis. The vertical scale represents the percentage of determinations, and the horizontal scale, the number of milligrams of lecithin per hundred cubic centimeters of serum.

7. Table 2 presents gradations in the values obtained for serum lecithin which parallel those for total cholesterol. There appears to be a gradual rise in average figures (table 2) as the disease progresses from primary to tertiary syphilis. The latter, however, does not quite attain the normal content as was noted for cholesterol. Thus curves *II*, *III* and *IV* of chart 6, representing primary, primary-secondary and secondary syphilis, respectively, show peaks at 180 mg. of lecithin, whereas that for curve *V*, graphing tertiary syphilis, falls at 220.

8. The results for albumin and globulin approximate the normal very closely. Especially is this true of albumin. Not only do the

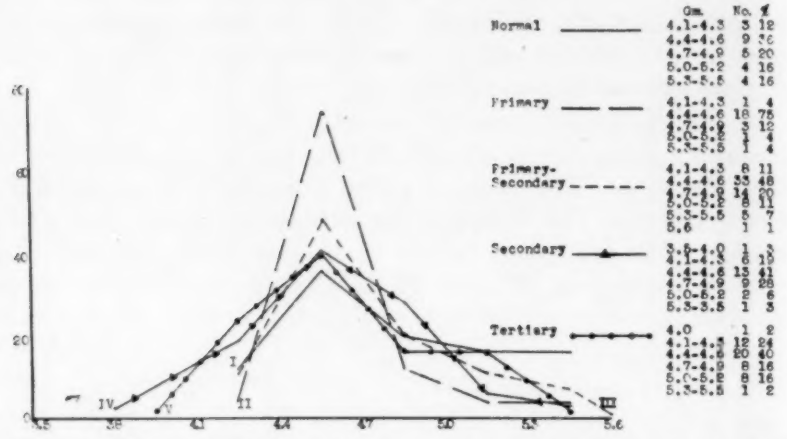


Chart 7.—Curves showing the frequency of the occurrence of albumin values for normal persons and for patients with different types of syphilis: *I*, normal persons; *II*, primary syphilis; *III*, primary-secondary syphilis; *IV*, secondary syphilis, and *V*, tertiary syphilis. The vertical scale represents the percentage of determinations and the horizontal scale, the number of grams of albumin per hundred cubic centimeters of serum.

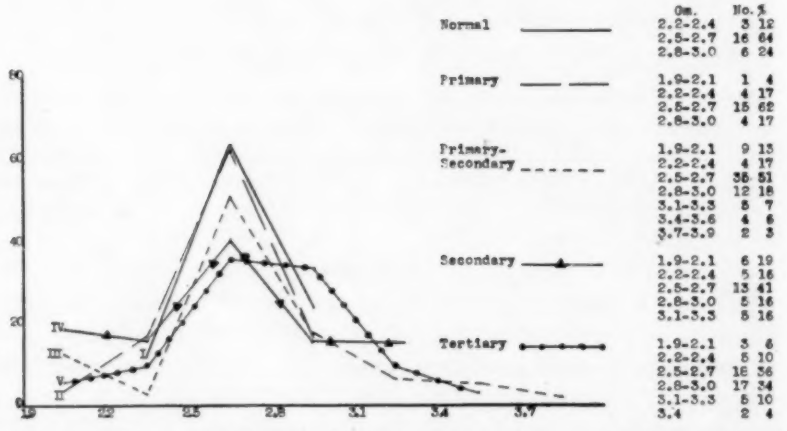


Chart 8.—Curves showing the frequency of occurrence of globulin values for normal persons and for patients with different types of syphilis: *I*, normal persons; *II*, primary syphilis; *III*, primary-secondary syphilis; *IV*, secondary syphilis; and *V*, tertiary syphilis. The vertical scale represents the percentage of determinations, and the horizontal scale, the number of grams of globulin per hundred cubic centimeters of serum.

average figures in table 2 show this approximation but also all of the curves of chart 7 present peaks at 4.6. The globulin tends to increase in tertiary syphilis. Forty-eight per cent of the analyses fall above the normal figure as compared with 17, 35 and 25 per cent for primary, primary-secondary and secondary syphilis, respectively. Also, there is a second peak for curve *V*, chart 8. between 2.8 and 3.1.

TABLE 4.—*Results of Analyses in a Patient with Pemphigus (Nathan F., Aged 55)*

Date	Total Lipids, Mg. per 100 Cc.	Cholesterol, Mg. per 100 Cc.				Lecithin, Mg. per 100 Cc.	Albumin, per Cent	Globulin, per Cent
		Total	Esters	Free	Free, per Cent			
5/25/32	Blood: 1,360	120	45	75	62.5	272	...	...
5/25/32	Serum: 1,740	147	101	46	32.0	207	...	...
6/ 6/32	Serum: blister	32	22	10	31.2	...	...	...
6/15/32	Blood: 1,440	162	91	71	43.8	247	...	...
6/15/32	Serum: 1,760	214	166	48	22.4	200	4.9	4.0
6/22/32	Serum: blister	111	66	45	40.0	...	...	...
7/ 7/32	Serum: blister	116	53	63	57.0	...	...	...
10/14/32	Blood: 1,400	139	61	78	56.1	267	...	...
10/14/32	Serum: 1,700	154	115	39	24.7	222	4.5	3.1
1/11/33	Blood: 1,360	150	66	84	56.0	267	...	...
1/11/33	Serum: 1,600	188	133	55	29.2	205	4.1	3.1
2/ 1/33	Blood: 1,540	140	73	67	47.9	247	...	...
2/ 1/33	Serum: 1,700	182	125	57	31.3	196	4.4	3.0
3/20/33	Serum: 1,600	214	155	59	27.9	217	4.1	3.0

TABLE 5.—*Results of Analyses in Pemphigus*

	Age	Sex	Total Lipids, Mg. per 100 Cc.	Cholesterol, Mg. per 100 Cc.				Lecithin, Mg. per 100 Cc.	Albumin, per Cent	Globulin, per Cent
				Total	Esters	Free	Free, per Cent			
G. S.	64	F	Serum: 1,610	300	143	157	52.3	...	4.8	2.7
S. W.	54	M	Serum: 1,530	226	150	76	33.1	220	3.8	2.8
			Serum: 1,500 (blister)	203	136	67	33.0	...	3.2	2.5
B. H.	36	F	Serum: 1,920	375	300	75	20.0	295	4.9	4.3
			Serum: 1,860	288	224	64	22.2	252	4.4	2.9
M. W.	38	M	Blood: 1,460	148	59	89	60.0	282	...	...
			Serum: 1,740	205	134	71	34.1	242	4.5	2.7

9. The values for the different lipids of serum vary through a very wide range—a range twice as great as that for whole blood. It is deemed necessary, therefore, to accumulate data on more cases before a correlation is made between the Wassermann reaction and any of the lipids.

In summarizing, it may be well to reiterate that these investigations show the same results for total cholesterol as we obtained in our previous studies, whereas the data for free cholesterol do not corroborate our earlier findings. This in all probability is due to the greater variations between the high and low values obtained for serum as compared with the whole blood. Not only is this wide variation true for the analyses of cholesterol, but it is equally evident for the determinations of the

other constituents of the serum. Therefore, further investigations are necessary to reach more definite conclusions.

ABSTRACT OF DISCUSSION

Dr. A. W. Stillians, Chicago: We are glad to have an opportunity to express our admiration to Dr. Rosen for the persistent and admirable work that he and his assistants have carried on. They have been studying this subject for nine years and intend to continue. We understand that a tremendous amount of work is necessary for what seems very slow progress. Work in metabolism is a new field, and Dr. Rosen and his co-workers naturally ran against difficulties which in many instances they overcame, but they have to feel their way, as do all explorers.

I should like to know whether Dr. Rosen considered examining the physical properties, the viscosity, the refraction or the drop in surface tension that has been spoken of in animals treated with antigen at the same time he examines the clinical properties of the serum.

I cannot discuss his paper intelligently, for he and his associates are the only persons who know the subject. We are dependent on them for our knowledge.

Dr. Theodore Cornbleet, Chicago: We know that our serum tests for syphilis are nonspecific, and that they are probably related to colloidal phenomena. In the colloidal world, surface actions are all-important. Surface phenomena are much affected by surface tension, viscosity, electric charge, etc. It is these matters that Dr. Rosen's studies concern.

The lipids are closely dependent on surface tension. I recently injected vegetable oils intravenously into animals and studied the effect of these injections on the antibody titers and the enzymes. As a result of these studies I am beginning to believe that the blood lipids play a rôle in the processes of immunity.

Since the iso-electric points of globulin and albumin are different, varying ratios of these constituents in the blood affect the surface charges on the bodies immersed in it. Flocculation depends on so-called critical points, and they, in turn, are dependent not so much on one factor, such as surface charge or tension, as on a combination of factors acting simultaneously. Thus the same surface tension may be present with or without flocculation, depending on the sum total effect of the rest of the actions going on at the same time. Dr. Rosen and his associates did well to consider lipids and albumin-globulin ratios at the same time.

Dr. Isadore Rosen, New York: I wish to thank Dr. Stillians for his complimentary remarks and Dr. Cornbleet for his discussion.

We are not the only men carrying on investigations of this nature. A colleague in South America is carrying on very similar studies in connection with yaws, and his findings compare well with ours.

We have been working for about eight or nine years and have merely touched the surface. I think that the field is rich, and that this work should stimulate other workers. Only in this way shall we perhaps be able to determine the processes of immunity in syphilis.

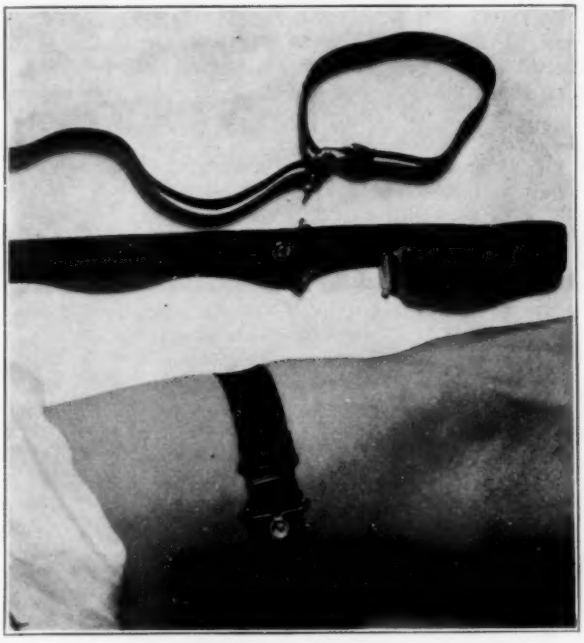
Two features in the work were interesting and definite. In a certain group of patients with active syphilis the total cholesterol was found to be very low on first examination, but on repeated tests during treatment it showed a gradual rise to normal. In contrast to this we found in another group a high total cholesterol on first examination, which was gradually reduced during treatment. The change to normal was very much slower in the patients who received bismuth as compared with those given the arsenicals.

Clinical Notes

A TOURNIQUET FOR INTRAVENOUS PROCEDURES

MARGARET E. STRAUB, NEW YORK, AND HERBERT P. MACNEAL, M.D., PHILADELPHIA

The accompanying photograph shows a new kind of tourniquet which has several distinct advantages over the types now in use, and which has been approved by all who have used it. The tourniquet consists of a convenient length of 1 inch (2.5 cm.) black cotton or silk elastic fitted with a broad metal hook at one end and a sliding eye, adjustable to the circumference of the extremity, in which the



An improved tourniquet for intravenous procedures.

hook engages. The loop thus formed is easily tightened by pulling on the free end of the elastic or is loosened by the force of its own elasticity when the tab on the sliding eye is raised. These operations are easily performed with one hand so that the other is free to palpate the pulse or vein. When injecting solutions into a vein, the tourniquet may be released instantly by a single simple twist of the wrist, a feature which minimizes the chance of causing hematoma. From a practical standpoint this type of tourniquet is ideal, being small and flexible to fit the pocket, complete in one unit and simple and durable. One elastic will stand months of daily use and may be renewed if desired, although the cost of the entire tourniquet is only slightly more than the cost of the elastic alone.[1]

From the Department of Pathology and Bacteriology, New York Post-Graduate Medical School and Hospital, New York (Straub), and Temple University Hospital, Philadelphia (MacNeal).

1. These tourniquets may be purchased through the Surgical Instrument Company, 3529 North Broad St., Philadelphia.

News and Comment

NINTH INTERNATIONAL DERMATOLOGICAL CONGRESS

The following announcement has been received from Prof. A. Néham, Budapest, President of the Ninth International Dermatological Congress: As a consequence of the invitation of the Hungarian government and the Hungarian Dermatological Society, it was decided at the Eighth International Dermatological Congress at Copenhagen to hold the ninth congress at Budapest. At Zurich on Oct. 18, 1931, the International Commitee charged the Hungarian Dermatological Society with the organization of the congress and settled the time as between Sept. 15 and 21, 1935.

The Organizing Committee, after obtaining numerous propositions and ideas of many eminent dermatologists and societies chose the following topics for discussion: (1) recently recognized functions of the skin; (2) reciprocal relation, correlation and antagonism between the skin and other organs; (3) allergy in dermatology and syphilology; (4) the rôle of metabolism in dermatology, including endocrinodermatoses and avitaminoses; (5) the influence of external causes on the frequency and manner of appearance of cutaneous diseases; (6) filtrable viruses in the etiology of diseases of the skin; (7) newly recognized forms and facts in tuberculosis of the skin; (8) immunobiologic, nonspecific and pharmacologic treatment of syphilis; (9) criteria of the healing of syphilis. The Organizing Committee also requests that some eminent dermatologists agree to deliver comprehensive addresses of a summarizing character on certain questions of general interest. Special committees of the congress will deal with different actual problems in dermatology: terminology, classification, teaching and professional problems (practice, technic, sick benefit associations, cosmetics, nostrums, quacks, etc.). One of these special committees will devote itself to the erection of an interclinical center for the gratuitous exchange of scientific and technical assistants and of material for dermatologic instruction and museums. The individual topics will be dealt with in three different sections. Every facility for projection and microscopic demonstration will be provided. In connection with the congress there will be a threefold exhibition: historical, scientific and technico-mercantile.

Reports and papers should be sent to the Central Bureau, Budapest, VIII, Mária u. 41, Hungary, by Feb. 28, 1935. Any information desired will be given by the Organizing Committee (Budapest, VIII, Mária u. 41). The president of this committee is Prof. L. Néhám; the vice presidents are Prof. E. Heuber, Prof. F. Poór, Prof. K. Berde, Prof. J. Guszman, Prof. L. Török and Dr. J. Sellei; the secretaries, Prof. J. Géber and Dr. S. Ballagi, and the treasurer, Dr. A. Pajor.

Obituaries

WALTER J. HIGHMAN, M.D.

1879-1934

Walter James Highman died on Jan. 24, 1934, from cerebral hemorrhage. He was born in the city of New York on May 2, 1879, and received his preliminary education in private schools and his A.B. from Columbia University in 1901. He studied medicine at the College of Physicians and Surgeons, Columbia University, was graduated in 1905 and served two and one-half years as intern at Mount Sinai Hospital. On the completion of his internship, he decided to take up dermatology as a specialty, and with this end in view he went abroad for training. He studied at the medical centers of Berlin, Freiburg, Paris and Vienna and at Bern under Professor Jadassohn, for whom he had a life-long admiration. After an absence of two years, he returned to his native city to take up the practice of dermatology and syphilology.

He immediately affiliated himself with three active dermatologic clinics, namely, at Mount Sinai, Lenox Hill and Lebanon hospitals, where he enriched his knowledge and gained greater clinical experience.

Early in his career he manifested a deep interest in research, and while still a medical student he spent two summer vacations in Europe, one at Strasbourg, where he studied chemistry under Hofmeister, and the other at Prague, where he studied pathology. Later, he equipped himself with all the laboratory methods connected with diseases of the skin, and although he was very enthusiastic about cutaneous pathology, he realized the limitations of the microscope in making a definite diagnosis of some of the more difficult and atypical conditions.

In addition to the clinical appointments mentioned, Walter Highman held an instructorship at various times at Cornell Medical School and at the College of Physicians and Surgeons, an assistant professorship at the New York Post-Graduate Medical School and a clinical professorship at the New York University Medical School. These appointments made it possible for him to devote himself to his chosen specialty along the broadest lines. One of his chief extramedical interests was reading, and his thorough knowledge of the masterpieces of all literatures not only gave him a wide culture but enabled him to philosophize most interestingly on many phases of medicine. His early writings were on problems associated with internal medicine, which fact he proudly boasted of, and he was ever ready to impress on his colleagues that he was more interested in the medical aspect of dermatology than in the mere treatment of the patient.

He wrote a number of books and at least sixty-seven articles which covered almost every branch of dermatology and syphilis. His style was individual, and one familiar with dermatologic literature could readily recognize his articles without his name. His knowledge of internal medicine, pathology, bacteriology, mycology and serology gave him a broad vision of problems met with in diseases of the skin and in syphilis.

Despite a physical handicap, he served during the World War with the rank of captain, and was honorably discharged at the end of the conflict with the rank of major.

WALTER J. HIGHMAN, M.D.
1879-1934

He was active in local and national dermatologic societies, and at various times held office in these organizations. In 1920, he was chairman of the Section on Dermatology and Syphilology of the American Medical Association. His discussions were intelligent, analytic and direct, and his presence was an addition to any meeting. His phraseology and delivery were the envy of all his colleagues. All who knew Dr. Highman appreciated his wit. His inspiring presence, profound knowledge and judgment as well as his fearless and precise opinions will be sadly missed.

On the evening that he was stricken he was working on an essay on historical medicine, a paper which he had begun six months previously.

I. ROSEN.

Abstracts from Current Literature

EDITED BY DR. HERBERT RATTNER

CONSERVATIVE SURGICAL MEASURES FACILITATING RADIUM IMPLANTATION. GEORGE S. SHARP, Am. J. Cancer **19**:622 (Nov.) 1933.

This article, based on work done at the Memorial Hospital for the Treatment of Cancer and Allied Diseases, New York, is an exposition of surgical treatment as an adjuvant to external and interstitial irradiation of carcinoma of the head and neck. Attention is devoted to the management of large cutaneous tumors of the face and lip, tumors of the buccal cavity and glandular metastases.

The writer advocates removal of bulky cutaneous tumors by surgical endothermy, immediately followed by the surface application of radium. Large tumors of the lip are treated preferentially by moderate irradiation, followed in ten days by extensive excision and plastic repair. Tumors of the mouth are similarly managed, both external and interstitial irradiation being used. This treatment is sometimes immediately preceded by surgical removal of large growths, as in the case of cutaneous carcinoma. The regional lymph nodes are regarded as a protective screen against a more diffuse dissemination of disease and are not usually destroyed but are subjected to thorough irradiation. Radical dissection of the nodes of the neck is carried out from six to eight weeks after external irradiation when indications for it are present.

FOERSTER, Milwaukee.

INVOLVEMENT OF THE EIGHTH NERVE IN SYPHILIS, WITH SPECIAL REFERENCE TO THE RESULTS OF TREATMENT. A. CIOCCO and A. WEINSTEIN, Am. J. M. Sc. **187**:100 (Jan.) 1934.

Of 286 syphilitic patients approximately 50 per cent were found to have normal hearing, the remainder being almost equally made up of those having excessive loss of high tones and those having subnormal hearing. Neurosyphilis was associated with involvement of the eighth nerve more often than were other types, but a diagnosis of neurosyphilis is not justified merely on the basis of impaired hearing in a syphilitic patient.

No relationship was found between treatment and the development of defects in hearing.

Except deafness in early meningeal syphilis, treatment has no effect on the hearing.

JAMIESON, Detroit.

CONJUGAL SYPHILIS: A STATISTICAL STUDY. H. B. DECKER, Am. J. M. Sc. **187**:111 (Jan.) 1934.

Three hundred and seventy-six couples were examined in the clinic for syphilis; 60 infections were found in the husband alone, 98 in the wife alone and 218 in both. As 41 per cent of the subjects escaped infection, it is felt that the disease is not extremely contagious, especially in the late stages. The wife seems less liable to transmit the infection.

The writer believes that the type of syphilis depends on the person rather than on any particular strain of spirochetes, and that the infectivity lessens as the duration of infection increases.

JAMIESON, Detroit.

CANCER OF THE MOUTH. CARL EGGERS, Ann. Surg. **99**:69 (Jan.) 1934.

This paper is a general review of the subject of cancer of the mouth without direct reference to the author's own series but rather on the basis of the present

experience and comment of both the radiologic and the surgical school of treatment. While comparatively brief, it constitutes a good synopsis. While the paragraphs on treatment are written primarily from the standpoint of the surgeon, they indicate a thoughtful and conservative consideration of the various forms of therapy that does not show undue bias for either the radiologic or the surgical methods but rather advocates a combination of both methods when indicated as serving the best needs of the individual patient.

EPITHELIOMA OF THE LIP, WITH PARTICULAR REFERENCE TO THE LYMPH NODE METASTASES. P. H. KENNEDY, Ann. Surg. **99**:81 (Jan.) 1934.

This paper is an analytic study of the cases of 246 patients with epithelioma of the lip treated at the Stuyvesant Square Hospital. The cases are tabulated as to the age and the sex of the patient, the use of tobacco and other etiologic factors, the duration, the size and the site of the tumor, the presence of palpable nodes on examination at entrance and the duration of the primary lesion preceding enlargement of the lymph nodes. Complete or partial resection of cervical lymph nodes was performed in 196 cases, and V-shaped excision of the lesion of the lip, in 182. Of the patients undergoing extensive resection of cervical nodes, 22, or 11.4 per cent, died in the hospital, 10 as a result of shock following unusually extensive resections. In 9 of these 22 patients actual metastasis was shown to exist, and in 12, only hyperplasia appeared on histologic examination. The present condition of 147 patients is known; 67 per cent of these are alive and well, 60 after more than three years and 31 after more than five years. Of 32 patients presenting metastases on entrance, 34 per cent are alive and well, 7 after more than three years.

GENITAL-ANO-RECTAL LYMPHOGRANULOMATOSIS OF THE MALE. WALDEMAR E. COUTTS, Ann. Surg. **99**:188 (Jan.) 1934.

Seven cases of genito-anorectal lymphogranulomatosis occurring in men are reviewed. The author concludes that this syndrome presents two forms in the male: One begins with abscesses and fistulas in the lower part of the perineum, which are not related to the urethra, and the anorectal symptoms appear several years later; in the other the fistulas appear after the rectal stricture is established. The author assumes the posterior portion of the urethra to be the possible point of entry in the first form, and the anus or rectum in the second. The blending of the two forms in some cases is assumed to be due to as yet undetermined lymphatic anastomoses. Four of the cases alluded to by the author are reviewed in detail.

WIEDER, Milwaukee.

OBSERVATIONS ON FUNGI ISOLATED FROM CASES OF BLASTOMYCOSIS CUTIS AND BLASTOMYCOSIS PULMONALIS IN NORTH AMERICA AND EUROPE: REMARKS ON BLASTOMYCETIN. A CASTELLANI and I. JACONO, J. Trop. Med. & Hyg. **36**:297 (Oct. 16) 1933.

Details are given of the cultural and microscopic characteristics of a number of cases of dermal and pulmonary blastomycosis.

Filtrates of cultures of four different species of blastomycetes were prepared. Intradermal and scratch tests on healthy persons were negative; in animals (rats) experimentally infected scratch tests were positive; in a patient clinically completely cured the reaction was doubtful.

JAMIESON, Detroit, Mich.

PATHOGENESIS OF ALOPECIA AREATA. M. MONACELLI and V. MONTESANO, Dermat. Wchnschr. **97**:1399 (Sept. 30) 1933.

A series of tests were made on seven patients with alopecia areata to determine whether there was any variation in reaction between the normal and the afflicted portions of the skin. These tests consisted in: (1) the determination of dermographia by stroking; (2) the production of trauma by scarification; (3) the applica-

tion of epinephrine (vasoconstrictor), caffeine (vasodilator) and morphine (lymphagog) to the scarified areas; (4) the determination of local sensations of temperature and pain. Considerable differences between the normal and the affected areas of the skin were noted which indicated a definite "dystonia" of the sympathetic nervous system.

STUDIES WITH THE CAPILLARY MICROSCOPE: PART I. S. BOMMER, Dermat. Wchnschr. **97**:1367 (Sept. 23) 1933.

A patient with extensive, severe roentgen dermatitis was treated by a modified Sauerbruch-Herrmannsdorfer diet. The involved areas were observed with a capillary microscope before and during treatment. A marked improvement in the local circulation was recorded by means of photographs. The clinical improvement was even more marked than that shown by the capillary microscope.

STUDIES WITH THE CAPILLARY MICROSCOPE: II. STEREOSCOPIC EXAMINATION OF THE CAPILLARIES OF THE SKIN. S. BOMMER, Dermat. Wchnschr. **97**:1395 (Sept. 30) 1933.

The author describes a technic for obtaining stereoscopic photographs of the magnified capillaries of the skin. He discusses the advantages of the method as well as the difficulties encountered.

INFLUENCE OF CHOLESTEROL AND LECITHIN ON THE TENDENCY TO INFLAMMATION OF THE SKIN. WOLFGANG ERDMANN, Dermat. Wchnschr. **97**:1372 (Sept. 23) 1933.

The tendency toward inflammation of the skin was measured in twenty patients by determining, by the administration of graduated doses, the amount of ultraviolet irradiation necessary to produce erythema. Ten of the patients were given lecithin and ten cholesterol by mouth for two weeks. The amount of ultraviolet irradiation necessary to produce an inflammatory reaction was again measured. Of the patients given lecithin, the tendency to inflammation was greater in two, unchanged in seven and slightly decreased in one. Of those given cholesterol, the tendency was decreased in five, unchanged in four and increased in one. Four untreated control patients gave the same reactions on two occasions at twelve day intervals. The author concludes that lecithin increases the tendency to inflammation while cholesterol decreases it. He believes that this effect is due to an alteration in the permeability of the cells of the skin.

GROWTH-REPRESSING AND KILLING EFFECT OF VARIOUS CHEMICAL SUBSTANCES ON EPIDERMOPHYTON RUBRUM, EPIDERMOPHYTON INTERDIGITALE AND TRICHOPHYTON PEDIS A AND B. LI HSUEH YI, Dermat. Wchnschr. **97**:1526 (Oct. 28) 1933.

Laboratory tests showed that Castellani's fuchsin, thymol, benzoic acid and salicylic acid were effective in repressing the growth of and in killing the organisms tested. Alcohol, carbolfuchsin, mercurochrome, sodium thiosulphate and flavine dye were found to be practically useless.

RECOVERY OF ACROSTALAGMUS CINNABARINUS CORDA FROM A CASE CLINICALLY ONE OF TINEA BARBAE. DANIEAL OLAH, Dermat. Wchnschr. **97**:1408 (Sept. 30) 1933.

A patient was observed who had an eruption on his face which was clinically typical tinea barbae. Cultural investigations revealed Acrostalagmus cinnabarinus Corda. Only two other instances have been reported in which this organism was apparently a pathogen. It is not pathogenic for the usual laboratory animals.

THERAPEUTIC EXPERIENCES IN THE TREATMENT OF PEMPHIGUS VULGARIS. E. KEINING, Dermat. Wchnschr. **97**:1423 (Oct. 7) 1933.

It is difficult to evaluate any form of therapy for pemphigus because of the extreme variability of the course of the disease. All the forms of treatment at present in use are symptomatic rather than specific and can be considered only as palliative. The various means of combating the condition are briefly reviewed. The author has had some success in treating the disease by means of roentgen castration, and he refers to several others who have had similar success.

MULTIPLE TUMOR-LIKE NODULES IN THE SKIN OF UNKNOWN ORIGIN: A CASE FOR DIAGNOSIS. P. FRANK, Dermat. Wchnschr. **97**:1467 (Oct. 14) 1933.

A student, 20 years of age, presented two pea-sized tumors, one on the cheek and the other on the palm. They had been present for about five weeks, and the one on the palm was slightly tender. No change was observed during two weeks' observation. Both growths were adherent to the epidermis and appeared as small bluish spots. General physical examination and laboratory tests showed no divergence from the normal. The nodules were excised, and histologic examination showed a marked fibrous capsule enclosing tissue made up of plasma, round and epithelioid cells, giant cells of both the Langhans and the foreign body type, many new capillaries and, especially toward the center, many leukocytes. The possibilities as to diagnosis are discussed, but no conclusion is reached.

GOLD CROSS WAR GAS DICHLORDIETHYLSULPHIDE CAUTERIZATION OF THE SKIN. AUGUST MATRAS, Dermat. Wchnschr. **97**:1523 (Oct. 28) 1933.

Two patients working in a chemical factory had a bullous eruption caused by exposure to dichlordiethylsulphide ("Gelbkreuz Kampfgas"). The eruption developed on exposed areas and started about eight hours after contact with the gas.

SHOULD A PATIENT WITH A SUSPICIOUS GENITAL LESION RECEIVE ANTISYPHILITIC THERAPY IN SPITE OF THE FAILURE TO DEMONSTRATE SPIROCHETES IN DARK-FIELD EXAMINATION? ANTON MUSGER, Dermat. Wchnschr. **97**:1532 (Oct. 28) 1933.

Musger discusses Oppenheim's statement that one should not always wait for a positive result of dark-field examination before starting antisyphilitic therapy. He believes that antisyphilitic therapy should never be started before one has verified the diagnosis by demonstrating Spirochaeta pallida.

FURTHER RESULTS OF INVESTIGATIONS OF THE CAUSE OF INDUSTRIAL ECZEMA IN BAKERS BY MEANS OF CLINICAL AND ANIMAL EXPERIMENTS. ERNA ZITZKE, Dermat. Ztschr. **67**:209 (Sept.) 1933.

Further clinical experiences confirmed the previous conclusion of the author that bakers' eczema is allergic. By intracutaneous and patch tests the patients were shown to be sensitive most often to the various "improvers" added to the flour. The commonest of these is ammonium persulphate. Zitzke was able to sensitize twenty-five of twenty-eight guinea-pigs to ammonium persulphate by repeated massage with the substance in petrolatum. It took from twelve to thirty days to sensitize the animals.

PITYRIASIS RUBRA PILARIS GENERALISATA RESEMBLING A FIGURED ERYTHRODERMIA. K. BEINTEMA and E. M. J. JANSEN, Dermat. Ztschr. **67**:222 (Sept.) 1933.

A girl, 18 years of age, presented a scaly, erythematous eruption which had been present for one and a half years. The figured arrangement of the scales on the trunk suggested tinea imbricata. A follicular keratosis was present over

the knees and the backs of the hands, and histologic studies of biopsy specimens from these areas as well as from the trunk confirmed the diagnosis of pityriasis rubra pilaris.

PATHOGENESIS OF CUTANEOUS REACTIONS TO ARSPHENAMINE AND THEIR PREVENTION. K. SHREINER, Dermat. Ztschr. **67**:230 (Sept.) 1933.

Four types of cutaneous reaction to arsphenamine are differentiated. These are (1) an angioneurotic symptom complex, (2) a fixed arsphenamine eruption, (3) acute universal exanthem and (4) arsphenamine dermatitis. These types are not sharply limited and may be combined. The arguments for and against the allergic nature of such reactions are presented, and the author concludes that they are truly allergic. Patch tests and intracutaneous tests were made on twenty patients who had one of these arsphenamine eruptions, and positive results were obtained with one or the other method in eighteen instances. Similar tests on one hundred and fifty persons who had not received arsphenamine showed but two positive reactions, and these were very mild. Passive transfer to human subjects was attempted in fifteen cases by the Prausnitz-Küstner and the Königstein-Urbach method. In eight cases the transfer was successful.

EPIDERMOLYSIS BULLOSA HEREDITARIA DYSTROPHICA. J. J. ZOON and C. P. J. PENNING, Dermat. Ztschr. **67**:244 (Sept.) 1933.

Three cases of epidermolysis bullosa hereditaria dystrophica in two families are described. In both families there was consanguinity of the parents.

THE INFLUENCE OF PYOGENIC INFECTION ON PSORIASIS VULGARIS. D. L. WORONOFF, Dermat. Ztschr. **67**:253 (Sept.) 1933.

The author observed ten patients with psoriasis in whom pyodermia developed. In seven of these the psoriasis cleared.

A FAMILY EPIDEMIC OF ERYTHEMA NODOSUM. P. L. ROTNES, Dermat. Ztschr. **67**:259 (Sept.) 1933.

In four sisters living in the same house, two adults and two children, erythema nodosum developed within five weeks. The tuberculin test was strongly positive in all the patients, and roentgen examination disclosed positive findings for tuberculosis in the two younger sisters. The author concludes that: (1) The erythema was the same in all four patients; (2) the tuberculous infection was a condition sine qua non for its development; (3) the location, appearance and course of the eruption could not be differentiated from those of idiopathic erythema nodosum; (4) erythema nodosum may occur on the basis of a tuberculous process in adults as well as in children, but whether or not this is always the case is not proved.

TAUSSIG, San Francisco.

CALCIFYING EPITHELIOMA OF THE SKIN. W. FINK, Virchows Arch. f. path. Anat. **289**:527, 1933.

Calcifying epithelioma of the skin has been held by many to be a characteristic kind of epithelioma. In 1930, B. Fischer described calcification of atheromatous epidermal cysts, which raised the question whether all of the so-called calcifying epitheliomas of the skin are true epitheliomas. Fink examined histologically nine such tumors and a number of atheromatous cysts. He concludes that the term calcifying epithelioma includes two kinds of structures. Some are true basal cell epitheliomas in which the epithelial parenchyma has undergone degeneration and fatty change. This is followed by organization of the connective tissue and calcification of the degenerated material, and sometimes by true bone formation. Others are atheromatous epidermal cysts in which inflammation of the capsule

has led to penetration of organizing connective tissue into the fatty contents of the cyst and to calcification. If the epithelium has become completely degenerated it is impossible to decide the origin of the calcified tumor. Although the so-called calcifying epitheliomas may be either true epitheliomas or atheromatous cysts that have undergone calcification, the process is identical in both and is essentially one of organization of degenerated epithelium. SCHULTZ. [ARCH. PATH.]

A NEW SERIES OF OBSERVATIONS ON THE EFFECT OF LIPOID THERAPY ON THE CLINICAL COURSE OF DEMENTIA PARALYTICA AND NEUROSYPHILIS IN PATIENTS NOT PREVIOUSLY INOCULATED, AS WELL AS IN THOSE PREVIOUSLY INOCULATED WITH MALARIA. V. E. GALENKO, Sovet. klin. **19**:173, 1933.

Patients from the Research Laboratory of Experimental Therapy in Moscow who came to the institution from the fall of 1930 to the summer of 1932 were observed as to the effect of lipoid therapy. There were ninety-nine patients, forty-six with dementia paralytica, twenty with the tabetic form of dementia paralytica and thirty-three with syphilis of the brain. A preparation containing lipoids of the brain was made at the laboratory or at the factory Semashko. It was injected intramuscularly daily in a dose of 2 Gm. The average number of injections given was from forty to sixty.

The results of the lipoid treatment in the patients with dementia paralytica were as follows: 17.4 per cent showed marked improvement and could continue in previous occupations; 60.9 per cent improved, but had to change their occupations for less exacting ones; 17.4 per cent did not show any change and were unable to engage in any occupation; 4.3 per cent became worse and had to be transferred to a hospital for mental diseases. The group with the tabetic form of dementia paralytica showed less beneficial effects, for only 5 per cent showed marked improvement, 15 per cent showed no change, and 10 per cent became worse, although 70 per cent were improved. The effect of the treatment in the group with syphilis of the brain was better than that in the group with the tabetic form of dementia paralytica and approximately the same as that in the first group.

The addition of from ten to fifteen injections of a preparation containing bismuth and quinine did not increase the effect of the lipoid therapy in the group with dementia paralytica but gave better results in the group with syphilis of the brain.

In the group with dementia paralytica 34.8 per cent had previously been inoculated with malaria, but they did not respond or responded much less to that than to the lipoid treatment.

Galenko holds the question of the duration of the effect of this therapy open for investigation.

THE USE OF AN ACETARSONE PREPARATION (OSARSOL) IN SYPHILIS. V. I. KAPLUN and V. L. BOSHTSHEVSKI, Sovet. klin. **19**:244, 1933.

Kaplun and Boshtshevski administered osarsol (a preparation similar to acetarsone) to 204 syphilitic patients; 19 had primary and secondary manifestations, 125 were in the secondary stage and the rest, in the tertiary stage. Thirty-eight received only the preparation of acetarsone; the others received the drug in combination with mercury, bismuth or iodide preparations. The initial dose was 1 tablet of 0.25 Gm. a day, which was increased daily by 1 tablet up to 4 tablets a day. One half of the dose was given in the morning on an empty stomach and the other half before retiring. In one course of treatment 120 tablets were given. In order to avoid a cumulative effect the course was divided into six parts with intervals of three or four days between. This was done because it was found that already on the third day after discontinuation of the drug there were only traces of arsenic in the urine, and that on the fourth day no arsenic could be detected.

Nineteen patients received three courses, 87 patients two courses and 98 patients one course. Spirochetes disappeared from lesions in the skin after from

two to five days; roseola vanished after from ten to fourteen days and papules, after from twelve to fourteen days. In patients with active secondary syphilis a Herxheimer reaction was frequently noticed, particularly on the second day; such a reaction lasted for one or two days. The action of the arsenical on the Wassermann reaction was somewhat less effective than that of arsphenamine. The toxic effects were mild; they were mostly noticed in the first part of the course of treatment and disappeared in the majority of instances in spite of continued administration of the drug. Fever was an exception, and was followed in most cases by dermatitis. The dermatitis was usually urticarial or erythematous; only in one instance was there a vesicular eruption. Like the other toxic manifestations, the dermatitis was benign.

In 11 cases there was a hypersensitivity not only to the acetarsone preparation but also to arsphenamine. Five patients who did not tolerate arsphenamine received the arsenic compound without injurious effects. Four patients who were sensitive to this compound tolerated neoarsphenamine. In two patients desensitization to the acetarsone preparation could be effected by administering small doses, starting with 0.01 Gm. Women and children were proportionately more sensitive to the drug than men. The development of a toxic manifestation, particularly dermatitis, could be foreseen a few days before absence of arsenic in the urine.

The authors believe this arsenical to be useful in peasants during seasonal work on the fields, in sailors and in patients who cannot tolerate arsphenamine or in whom arsphenamine is contraindicated.

CONTRIBUTION TO IMMUNOLOGIC STUDIES OF SPIROCHETOSES: IV. SPIROCHETES IN THE LYMPH GLANDS AND SPLEEN OF THE RABBIT INTRAVENOUSLY REINFECTED. H. MISAIZU, Lues: Bull. Soc. japon. de syph. **9**:143 (June) 1933.

Three syphilitic rabbits were treated with arsphenamine from thirty to thirty-five days after infection and then were reinfected. Emulsions of the spleen and lymph glands of each rabbit were injected intracutaneously into normal rabbits, and the following observations were made: Inoculation with an emulsion of the spleen diluted as much as forty-eight times produced cutaneous lesions after an incubation of from forty-three to fifty days. An emulsion of the lymph glands diluted 1:5 gave a positive result after an incubation of from fifty to seventy-five days.

Two rabbits were treated with arsphenamine one hundred and sixty-three days after the syphilitic infection and then reinfected. The emulsion of the spleen of one produced cutaneous lesions in normal rabbits in a dilution of 1:5; inoculation with the emulsion of the lymph glands gave a negative result. The second rabbit's spleen and lymph glands gave negative results.

Of rabbits which had been infected from one hundred and ninety-five to six hundred and thirty-six days and then treated with arsphenamine and reinfected, one yielded lymph glands which, when emulsified and inoculated in a dilution of 1:5, produced positive cutaneous reactions in normal rabbits; the emulsion of the spleen however, produced no cutaneous lesions. Negative results were obtained with both the lymph glands and the spleens of five other rabbits in this group.

From these experiments Misaizu concludes that syphilitic rabbits show a slight immunity as early as thirty-five days after infection and that this immunity is quite marked after six hundred and thirty-six days.

SYPHILITIC TUMOR OF THE SPLEEN ASSOCIATED WITH THE SYMPTOM COMPLEX OF BANTI. S. NISIKORI and H. KOIKE, Lues: Bull. Soc. japon. de syph. **9**:164 (June) 1933.

In the last sixteen years Nisikori and Koike have treated twelve patients with tumors of the spleen associated with the Banti symptom complex. In spite of a negative Wassermann test of the blood the patients were subjected to antisyphilitic treatment, which brought about marked improvement. The spleen and liver diminished in size and consistency. There was an increase in the number of

erythrocytes, in the amount of hemoglobin, in the color index and in the total and neutrophil leukocyte counts. There was a decrease in the numbers of lymphocytes, large mononuclears and transitionals. The improvement in the subjective and objective symptoms leads the authors to assume that the tumor of the spleen was produced by syphilis.

THE MEINICKE CLARIFICATION REACTION II IN SYPHILIS. S. SAITO and H. MITANI, Lues: Bull. Soc. japon. de syph. **9**:176 (June) 1933.

In 1929 Meinicke published a new syphilitic reaction, the Meinicke clarification reaction, which because it necessitated complicated equipment and because it was frequently nonspecific was not employed in Japan as frequently as other flocculation reactions like those of Murata, Kahn, Sachs-Georgi and others. Recently he published a new reaction the technic of which is much simpler and which is quite useful: Meinicke clarification reaction II.

Saito and Mitani have used this test on serums of 696 syphilitic patients and also on serums of syphilitic rabbits. The result of the test is read as follows: One and a half hours after the reaction begins it is examined with artificial light by means of a magnifying glass; if it is doubtful, a microscope is used (rapid reaction). Twenty hours later the reaction is examined with the naked eye (late reaction).

The authors have compared this reaction with the Wassermann reaction and found coincidence of results in 91.1 per cent of the cases (634 cases). In 11 cases the Meinicke clarification reaction II was negative while the Wassermann reaction was positive, and in 51 cases the M.K.R.II was positive while the Wassermann reaction was negative. In examination of the rabbit serums this reaction proved much more sensitive than the Wassermann reaction: Before the outbreak of syphilitic manifestations, while the Wassermann reaction was negative the M.K.R.II was positive; in the stage of regression, after the Wassermann reaction had become negative the M.K.R.II was still positive. BLOOM, New York.

GOLDSTEIN'S DISEASE OR RENDU-OSLER-WEBER DISEASE. HYMAN I. GOLDSTEIN, Acta dermat.-venereol. **13**:661 (Dec.) 1932.

A review of the literature on heredofamilial angiomatosis with familial hemorrhages (Goldstein), or Hendu-Osler-Weber disease, is given. The literature contains authentic reports on about one hundred and ten families and six hundred persons with this heredofamilial disease. A thorough search of the literature of the past century on hemophilia, hemorrhagic diathesis, hereditary bleeding and related conditions may disclose records of additional cases.

As the condition is due to a hereditary defect in the blood vessels and capillaries, treatment is limited to the control of bleeding and correction of the resulting anemia. The salient clinical features are described.

FAMILIAL JUVENILE ACANTHOSIS NIGRICANS. SWEN HELLERSTRÖM, Acta dermat.-venereol. **14**:88 (June) 1933.

Hellerström reports a case of familial juvenile acanthosis nigricans associated with severe diabetes mellitus. The endocrine character of the condition—the patient also had cutis verticis gyrata—is apparent since the condition of the skin as well as the metabolic condition showed decided improvement following total castration.

"KOILONYCHIA E STOMACHO." J. H. BROEKEMA, Acta dermat.-venereol. **14**:113 (June) 1933.

Broekema describes in detail two cases of koilonychia in women with chronic chlorosis associated with achlorhydria. With improvement in the latter condition there was corresponding improvement in the nails. Hence he proposes to name this constitutional form of koilonychia, "Koilonychia e stomacho."

ETIOLOGY OF PEMPHIGUS AND DERMATITIS HERPETIFORMIS. ROBERT BERNHARDT, Acta dermat.-venereol. **14**:165 (July) 1933.

Bernhardt's experiments with blood serum and contents from vesicles failed to produce symptoms in rabbits that were given intravenous and subcutaneous injections. He considers as unsettled the question as to whether these diseases are of toxic or infectious origin.

ERUPTIONS IN INFLUENZA AND GRIP. M. O. DERBANDIKER, Acta dermat.-venereol. **14**:175 (July) 1933.

Cutaneous eruptions in influenza have been observed during various epidemics since 1890. They may be scarlatiniform, morbilliform or roseolar; they may appear as a diffuse erythema, purpura, urticaria, multiform exudative erythema or erythema nodosum. They occur during the first weeks of the disease, are sometimes very transient, and always disappear as soon as the fever ceases, without leaving a trace. The author has observed six cases.

SCHORR, Chicago.

ERYTHEMA NODOSUM AND LATER TUBERCULOSIS. H. J. USTVEDT and A. S. JOHANNESSEN, Norsk. mag. f. lægevidensk. **94**:532 (May) 1933.

Three hundred and twelve persons were followed for years after an attack of erythema nodosum; the longest period of observation was seventeen years. Clinical tuberculosis occurred in 10 per cent of these patients during the first year after discharge from the hospital. It was found in only 1 per cent from the second to the fifth year following the attack and was not detected in any after the fifth year. The authors believe that this finding may be interpreted as an indication that erythema nodosum is a phenomenon of hypersensitivity to the tubercle bacillus.

TOVERUD, Oslo, Norway. [AM. J. DIS. CHILD.]

Society Transactions

LOS ANGELES DERMATOLOGICAL SOCIETY

L. F. X. WILHELM, M.D., *Secretary*

Regular Meeting, May 9, 1933

SAMUEL AYRES, JR., M.D., *in the Chair*

SYPHILITIC SYNOVIAL CYST. Presented by DR. SAUL ROBINSON for DR. KENDAL FROST.

This patient has had a lesion on the right middle finger for about two months. It is a dark red, soft nodule not tender to the touch. A cutaneous test for syphilis has repeatedly been strongly positive. The nodule and erythema subsided with antisyphilitic therapy, but the lesion enlarged again until it reached its present size. There was a local Herxheimer reaction after the first injection of neoarsphenamine. The Wassermann reaction of the blood has been repeatedly 1 plus or doubtful. The Wassermann reaction of the spinal fluid has been negative.

DISCUSSION

DR. IRVING R. BANCROFT: I have seen a number of similar cysts in connection with Heberden's nodes.

DR. SAMUEL AYRES, JR.: The lesion appears to be a hemangioma rather than a synovial cyst. It is very soft, superficial and purplish, and on squeezing it one can see a definite dark purplish color like that of blood.

DR. NELSON P. ANDERSON: I have always thought that a synovial cyst must be connected with the synovial lining of the joint. I could not discover any connection with the joint in this case, and I believe that the cyst comes from the tendon sheath.

DR. H. S. CAMPBELL: I saw the lesion early, and my opinion differs from Dr. Robinson's in that I think it was then at least two-thirds larger than it is now. There has not been sufficient color to justify a diagnosis of hemangioma. The lesion is apparently attached to the tendon, not to the joint, because it is rather freely movable. It has vacillated in its response to therapy, but its size has diminished at least two-thirds since I first saw it.

CLUBBED FINGERS WITH ONYCHOGRYPOSIS. Presented by DR. H. C. L. LINDSAY.

This man, an American, aged 34, appears slightly undernourished and presents blueness of the mucous membrane of the lips as well as duskiness of the exposed skin of the hands, feet and face. The finger-tips and the toes at the distal phalanges are greatly enlarged, dark blue and cold to the touch. The nails are greatly enlarged, somewhat ridged longitudinally and dull blue. They are convex both longitudinally and transversely. The patient says that the condition has been present all his life. He gives a history of "lung trouble" for many years. There are moist râles in the apex of the left lung. Dyspnea has been continuous and prominent. Examination of the heart indicated some myocardial damage and right ventricular preponderance. There are a ventricular extrasystole and left ventricular hypertrophy. The Wassermann reaction is negative. The roentgenograms show indefinite pulmonary sclerosis.

DISCUSSION

DR. H. C. L. LINDSAY: It is peculiar that a congenital lesion of the heart should have such an effect on the extremities. There must be some relationship in addition to a circulatory one between the trophic nervous system and the extremities.

ACRODERMATITIS CHRONICA ATROPHICANS WITH SCLERODERMATOUS CHANGES. Presented by DR. SAMUEL AYRES, JR.

This man, a carpenter, aged 49, has had involvement of the skin of the feet, legs and hips for approximately five years. The past history is essentially unimportant, although he states that he has had varicose veins for many years. The eruption started about the ankles.

The affected areas include the legs, especially the extensor aspects, from the feet to near the iliac crests, the flexor surfaces of the wrists and the extensor surfaces of the arms over the elbows and the adjacent parts of the forearms. The skin is markedly atrophic and purplish red, and the superficial veins show through it. In places, especially over the right elbow, there is more or less scleroderma, and the skin cannot be easily picked up between the fingers. There are several large varicose veins on the lower part of each leg, especially the left. One examination of the urine gave negative results for arsenic, while another revealed a trace.

DISCUSSION

DR. SAMUEL AYRES, JR: Where definite sclerodermatous changes are present, for instance over the elbows and knees, it is difficult to pick up the skin.

DR. MOSES SCHOLTZ: This is a classic case of acrodermatitis chronica atrophicans. The atrophic stage is more conspicuous than any other. There are not many sclerotic changes.

COCCIDIOSIS. Presented by DR. H. P. JACOBSON.

This white woman, an American, presents destructive ulceration of the tip of the nose. There are a number of complaints referable to a systemic infection. Her trouble had its inception about ten months ago with an attack of pleurisy which confined to her to bed for several days. Three months later a "pimple" developed on the right side of the nose. This suppurated rather rapidly, and the physician in charge treated it with various local remedies without benefit. As her family physician and a consultant surgeon failed to afford her relief in the course of several weeks' treatment, she consulted a dermatologist. In a biopsy specimen and in cultures from the lesion he discovered Coccidioides. She has since then been under constant treatment in El Paso, Texas, but has experienced no benefit.

When first seen by me one week ago, her temperature was about 1 F. above normal, and she looked flushed and gave the impression of being rather markedly fatigued. Roentgen examination of the chest revealed a marked degree of pulmonary involvement, suggestive of coccidioidal infection. About three fourths of the nose was swollen, dusky red, tender to the touch and painful. The swelling and discoloration extended to the flush areas of both sides of the face, especially the right side. Stereoscopic roentgen studies of the sinuses revealed a rather suggestive thickening of the lining of the right antrum. The alae nasi and the inferior portion of the nasal septum presented acute nodular, papillomatous, ulcerative involvement with a good deal of destruction of the tissues. The upper lip and the right side of the face presented similar nodular, ulcerated lesions, which were less acute and more discrete. A solitary lesion was present on the inner aspect of the mucosa of the upper lip.

The patient complained bitterly of a nasal discharge and marked pruritus of the nose. She had received as systemic treatment injections of antimony and potassium tartrate, iodides, colloidal copper and a coccidioidal vaccine prepared in San Francisco. Locally she had received applications of nitric acid, phenol, corrosive mercuric chloride and roentgen rays. The roentgen irradiation caused a spreading of the lesions to the face. In addition, she was treated by means of electrocoagulation and carbon dioxide snow. None of these treatments afforded relief.

Coccidioides immitis was recovered directly from the tissue taken for biopsy and from nasal smears and on culture.

The patient is under treatment, and notwithstanding complicating dorsolumbar herpes zoster which developed about ten days ago she seems to be doing well.

LUPUS PERNIO. Presented by DR. NELSON P. ANDERSON.

M. K., a woman aged 34, has involvement of the skin of the fingers and nose of four or five months' duration. Two brothers and a grandmother died of tuberculosis. The patient lived in Canada during her childhood and her hands and toes were frostbitten several times. During the past winter she has handled refrigerated foods a great deal. The condition has improved following four injections of gold and sodium thiosulphate.

There are numerous deep red to purplish nodules along the dorsal aspects of several fingers. There are also redness and slight puffiness of the lower end of the nose.

URTICARIA PIGMENTOSA. Presented by DR. SAMUEL AYRES, JR.

This patient's eruption was first noted when he was about 7 months old. He is now 17 months old. There is no family history of allergic manifestations. There have been no gastro-intestinal disturbances, although the mother thinks that eating acid fruits makes the lesions more red and elevated. She also feels that emotional disturbances and exposure to sea air aggravate the condition. There are two other children in the family, who are normal. The eruption first appeared on the face and gradually spread.

The child is well developed and well nourished. The eruption is almost entirely limited to the face, neck, arms and legs, but there are a few scattered lesions on the trunk. The lesions are brownish, discrete macules the size of a pinhead. As the result of rubbing, however, they become definitely, though only slightly, elevated.

DISCUSSION

DR. CHRIS HALLORAN: The father of the patient told me that the lesions followed measles. To my mind they are verrucae planae.

DR. SAMUEL AYRES, JR.: The lesions show a definite characteristic of urticaria pigmentosa. As soon as one rubs them they stand out. Emotional upsets also raise them. I did not see the patient until this morning, when all the lesions were flat.

DR. H. S. CAMPBELL: The mother told me that she has distinctly noted that the lesions tend to fade, some almost disappearing, but that following a warm bath they recur more markedly. That, I believe, should eliminate verrucae planae.

ULCERATION OF UNKNOWN ORIGIN. Presented by DR. SAMUEL AYRES, JR.

Dr. G., aged 35, has a lesion on the anterior aspect of the left thigh which began about nine months ago as an area of diffuse redness and induration which was nearly the size of a palm. The onset was accompanied by fever, the temperature fluctuating as high as 102 F. for about a week. Finally the area was incised, even though no softening was noted, and about 1 ounce (30 cc.) of pus was obtained.

The patient had an attack of epidermophytosis of the feet about three weeks prior to the onset of the lesion on the thigh. He had had recurrent attacks of epidermophytosis of the feet accompanied by vesiculopapular lesions of the hands for a number of years. He had also had several infected mosquito bites on the ankles. About one year prior to the onset of the lesion on the thigh, while the patient was living in Shanghai, a streptococcic infection developed on one hand following paronychia, and after ten operations the hand and the forearm were amputated.

The lesion on the thigh has gradually enlarged in spite of roentgen therapy, the application of dressings wet with compound solution of copper and zinc sulphate

(Alibour's solution) and of gentian violet, ultraviolet irradiation and intravenous injections of sodium iodide and of an autogenous vaccine containing hemolytic streptococci and diplococci. About two months ago the whole lesion was excised with the cautery, and an attempt was made to suture the edges together. The entire area broke down and formed an ulcerating lesion considerably larger than the original one.

Various cultures and smears have been made. Streptococci and diplococci have been found repeatedly. Aerobic and anaerobic cultures on Sabouraud's medium have given negative results except that in one instance an unidentified fungus developed in aerobic culture and soon died. Epidermophyton cruris, Epidermophyton interdigitale and an unidentified fungus different from the one obtained from the lesion on the thigh were isolated from the lesions on the feet. Extracts of the two strains of Epidermophyton when injected intradermally gave negative results. The unidentified fungus died soon after it was obtained. A Frei test was negative.

There is now a palm-sized ulcer on the upper part of the anterior aspect of the left thigh. The base is uneven and spongy, and there are a number of deep sinuses, especially about the edges. The edges are undermined in places. The bordering skin presents a wooden-like induration. A few days ago a piece of tissue was excised, and a guinea-pig was inoculated. There has been no report of the result.

DISCUSSION

DR. H. S. CAMPBELL: The lesion, I understand, has been treated by cauterization. What was its original appearance?

DR. SAMUEL AYRES, JR.: The lesion was recently removed by cautery. Prior to that it looked the same as it does now except that it was smaller. The patient was anxious to have the lesion heal and thought that excision might shorten the time, but it merely substituted a larger ulceration for a small one. The patient lived in China for a number of years.

LICHEN SPINULOSUS. Presented by DR. SAMUEL AYRES, JR.

H. B., a boy aged 11 years, who was first seen at the Yale Street Clinic, presents lesions of six months' duration. There is no history of tuberculosis. He had a recurrent discharge from the ears, the last attack having occurred a year ago. Otherwise he has been in good health.

The eruption is confined to the arms, legs, thighs and knees and is roughly symmetrical. It consists of ill-defined areas varying in size from patches the size of a dime to some larger than a dollar. In these areas there are flesh-colored, flat and acuminate papules. Such lesions are present on both the flexor and the extensor surfaces, and they seem to be definitely follicular, especially when located on hairy extensor areas. The tonsils have been removed, but there are several palpable cervical glands.

DISCUSSION

DR. KENDAL FROST: I am particularly interested in this case because last year I saw a boy about the same age with almost identical lesions, and biopsy revealed changes in the tissues typical of those of lichen planus. I feel that the designation of lichen spinulosus should be confined to lesions which present spicules that are follicular. Though these lesions are rather keratotic, they should be designated as lichen planus.

DR. H. P. JACOBSON: I am not certain that the diagnosis of lichen spinulosus is tenable. I examined the lesions rather closely, and they appeared to be flat, shiny and somewhat multi-angular and to have a fair resemblance to the lesions of lichen planus. I was especially impressed with the presence of some lesions which were definitely made up of linearly arranged, suggestive papules. I was unable to observe the horny elements which are characteristic of lichen spinulosus, but I found a number of umbilicated lesions. I think that the eruption is lichen planus.

DR. NELSON P. ANDERSON: The lesions are rather flat and smooth-topped, with a tendency to be embedded in the skin, and are not the elevated, spiny lesions which one associates with lichen spinulosus. I suggest a diagnosis of lichen nitidus.

DR. MOSES SCHOLTZ: I believe that this condition belongs to the lichen group. The lesions are too soft to be those of lichen spinulosus, which are sharp and keratotic. They are not flat or waxy enough to be those of lichen planus. If they were located on the back, the majority of observers would think the condition lichen scrofulosus.

DR. SAMUEL AYRES, JR.: I considered all the diagnoses suggested. Against lichen planus are the facts that the itching is not marked and particularly that the lesions are flesh-colored, not violaceous, and occur in definite groups. While the lesions on the flexor surfaces of the forearms are flat, those on the extensor surfaces are definitely acuminate. The entire picture, especially the central follicular hyperkeratosis, is more in keeping with lichen spinulosus. The lesions of lichen scrofulosus are apt to be more sharply grouped than these, and those of lichen nitidus are less definitely grouped. We will give the patient mercury or bismuth and watch the result. We will also try to get a biopsy specimen.

LUPUS ERYTHEMATOSUS. Presented by DR. MOSES SCHOLTZ.

This man, aged 38, presents spots on the face of two years' duration. His mother suffers from "butterfly" cancer (?) of the face, and one sister has scaling areas on the nose. His general health is good except for occasional dyspepsia. All his teeth were removed a few weeks ago. In spite of fifteen injections of from 25 to 60 mg. of gold and sodium thiosulphate several new patches have developed.

There are now well defined, oval, dry, slightly infiltrated, reddish patches with tightly adherent scales on the face and neck.

DISCUSSION

DR. MOSES SCHOLTZ: This patient is rather resistant to treatment with a gold compound.

DR. NELSON P. ANDERSON: I agree with the diagnosis of lupus erythematosus, and I believe that bismuth therapy is indicated. Recently in Dallas, Texas, Dr. Bedford Shelmire presented a patient with lupus erythematosus of the nose which resisted treatment with gold compounds and freezing but improved a great deal after a few doses of bismuth. It may also be worth while to consider the local use of colloidal bismuth ointment or of bismuth oxychloride ointment.

DR. H. S. CAMPBELL: I have a patient with lupus erythematosus most of whose lesions are not on the exposed surfaces. She has three extensive lesions in the mouth, two small ones under each eye and some on the covered parts. She gives a history of having had the lesions for several years. When she became pregnant, they cleared almost entirely except for the three in the mouth. She had received treatment with a gold preparation for some time previous to pregnancy with little improvement. The lesions were marked when she came to me about four months ago. Because of the history, I instituted bismuth therapy. Unfortunately she became pregnant again two months ago, so I could not determine exactly what good the bismuth was doing, but she was very much improved.

DR. H. P. JACOBSON: I cannot subscribe to the diagnosis of lupus erythematosus. It is rather strange that the fully exposed portions of the face are free from involvement, while the parts which are not wholly exposed to light are affected. Furthermore, the patient complains a good deal of itching in the involved areas, and the lesions from the standpoint of color, shape and covering have the morphology of hypertrophic lichen planus. I submit a diagnosis of lichen planus hypertrophicus.

DR. KENDAL FROST: From time to time there have been discussions in this society on the relationship between lupus erythematosus and sensitivity to sun-

light. I have seen a good many cases of this disorder in which the lesions seem to be aggravated by exposure to sunlight and others in which this relationship does not exist. I cannot conceive of sunlight being a factor in the production of this patient's disorder. I believe that lupus erythematosus may be caused by sensitivity to light but that not all cases present this character.

PURPURA ANNULARIS TELANGIECTOIDES. Presented by DR. STANLEY O. CHAMBERS.

This patient was presented before this society on Feb. 14, 1933, and is presented again for discussion.

DISCUSSION

DR. MOSES SCHOLTZ: Majocchi's disease presents a more or less annular form of angioma. There is no evidence of circinate lesions in this case. Majocchi's disease is apt to be acute and recurrent. The persistence of these lesions for many years is against that diagnosis. Furthermore, no telangiectasia is present. I think that the condition is urticaria pigmentosa.

DR. H. S. CAMPBELL: One must recollect that Majocchi's disease is very rare. I have not reviewed the literature on it for a long time, but I should have to change my views entirely to accept this condition as Majocchi's disease. Four of the cardinal characteristics given by Majocchi when he first described the disease were telangiectasia, atrophy, ulceration and location in the lower limbs. Dermatologists are constantly adding to Majocchi's conception of the condition. Some of the cases that Dr. Scholtz listed in the ARCHIVES OF DERMATOLOGY AND SYPHILOLOGY (**19**:769 [May] 1929) were not, in my opinion, instances of Majocchi's disease. I think that instead of embellishing the original description one should call the entity by another name.

DR. NELSON P. ANDERSON: A patient with Majocchi's disease of ten years' duration certainly ought to show some clinical atrophy. Another factor against this diagnosis is that in Majocchi's disease there is nearly always a history of recurrent groups of lesions which go through a certain evolution and involution, after which there is a period of freedom from new lesions. Dr. Scholtz's suggestion of angioma serpiginosum is good. The picture that this patient presents is in accord with the observations of Dr. Fred Wise (*J. Cutan. Dis.* **31**:725 and 916, 1913), particularly in view of the fact that the condition apparently started on one shoulder and spread from that point.

DR. STANLEY O. CHAMBERS: I appreciate fully the difference between urticaria pigmentosa and Majocchi's disease, and angioma serpiginosum. Majocchi's disease can occur elsewhere than on the legs and thighs. There are many characteristics of this eruption which are not typical of urticaria pigmentosa. Telangiectatic tufts and slight atrophy can be identified with the aid of a magnifying lens. These changes are present in Majocchi's disease. It is difficult to produce an urticarial reaction by friction. A biopsy section from one of the lesions was not suggestive of urticaria pigmentosa.

MANHATTAN DERMATOLOGIC SOCIETY

M. B. PAROUNAGIAN, M.D., *Secretary*

Oct. 10, 1933

LOUIS B. MOUNT, M.D., *Chairman*

GENERALIZED LICHEN PLANUS. Presented by DR. ISADORE ROSEN.

This Jewish woman, aged 68, has a generalized eruption involving the face, scalp, trunk and extremities, which was of four months' duration at the time of

admission to the hospital early in September, 1933. The face presents an erythroderma-like eruption, whereas the lesions on the extremities are flattened bluish papules which are close together and give the skin a lichenified appearance. The scalp presents a moderate amount of scaling. On the wrists and on the buccal mucosae there are typical lichen planus papules. There are also some lesions on the tongue and lips. The axillae, submammary areas, middle of the back, palms, groins, lower two thirds of the legs and feet are free from lesions. The nails are not involved. There is no history of previous illness. The condition began in 1933, as erythema about the neck with intense itching. It spread rapidly over the body.

Urinalysis on September 5 showed the presence of sugar and a faint trace of albumin. The Wassermann reaction on September 5 was negative. A blood count on September 6 showed: hemoglobin, 92 per cent; platelets, 280,000; red cells, 5,020,000; white cells, 4,950; polymorphonuclears, 64 per cent; lymphocytes, 31 per cent; mononuclears, 3 per cent, and eosinophils, 2 per cent. On September 7 the blood sugar was 155 mg. per hundred cubic centimeters; there was no sugar in the urine.

The pathologic report on a lesion from the wrist examined on September 11 was as follows: There was evident hyperkeratosis in the center of the section. The epidermis was atrophic and showed definite formation of papules and evidence of pressure causing the atrophy. The papillary bodies in that region were flattened. The basal cells throughout the section showed intracellular edema. There was a great deal of edema in the papillary and subpapillary layers of the cutis, with an inflammatory reaction consisting of mononuclear cells and leukocytes. Some of the inflammation was perivascular. There was no evidence of lichen planus or mycosis fungoides.

The pathologic report on a lesion from the back examined on September 16 was as follows: The epidermis showed hyperkeratosis. The stratum granulosum in places was somewhat widened. There was marked intracellular edema along the basal layers, with abortive formation of vesicles. The epidermis-cutis line was very irregular in places and not clearly defined because of this. The upper layers of the cutis showed a moderate amount of inflammatory reaction, consisting primarily of lymphocytes and fibroblasts. The infiltration was not as sharply circumscribed as is usual in lichen planus, but the histologic picture could fit in with that of lichen planus.

DISCUSSION

Dr. David L. Satenstein: Why did the presenter emphasize the "erythematous" nature of the lichen planus? Neither the clinical nor the histologic picture fits in with that in the cases of erythematous lichen planus described in the literature. There is no unusual dilatation of the vessels, but there is comparative thinning of the epidermis as well as somewhat more marked edema of the cutis than is usually noted in lichen planus. I regard the condition as an edematous type of lichen planus.

Dr. Fred Wise: Dr. Rosen's case, which is an unusual manifestation of the disease, is of great interest. The appearance of diffuse erythema in his patient is due to the coalescence and final fusion of individual papules. In the erythematous form of lichen planus there is diffuse and uniform erythema, like erythema simplex, in the midst of which lichen papules later appear. In fact, diffuse uniform erythema may be a prodromal symptom, preceding the appearance of lichen papules by days, weeks or even months.

Dr. Isadore Rosen: I have seen lichen planus become more or less generalized, but I have never seen a type as universal as this. The clinical features of the case are interesting because my associates and I were unable to make the diagnosis until we saw typical lesions on other parts of the body.

A Case for Diagnosis. Presented by Dr. Joseph J. Eller.

This woman, aged 51, gives a definite history of allergy. One brother had asthma, and the patient herself has it although she has had no attacks during the

past three years. She has had a large number of cutaneous tests with no definitely positive reactions. Her general health is good, and her digestion and elimination are apparently normal. She has taken no drugs or cathartics except liquid petrolatum and cascara sagrada occasionally. The menstrual periods are normal. She has used alcohol moderately and has taken much less since the onset of the present symptoms.

For the past four months she has complained of excessive dryness with occasional burning of the lips, especially at the vermilion borders and at the mucocutaneous junctions. The lips present a dry, slightly scaly and moderately glazed appearance. The lower lip appears slightly swollen. No lesions of the mucous membranes and no pathologic changes in the glands are apparent. There is mild acne on the back, with an occasional papule on the face.

All applications of cosmetics, tooth pastes, etc., have been discontinued. A wide variety of ointments and a few applications of grenz rays have been given but none of these procedures gave relief.

DISCUSSION

Dr. George M. MacKee: One must consider conditions such as dermatitis venenata, dermatitis medicamentosa, psoriasis, lichen planus, lupus erythematosus and even Vincent's angina. However, it is probably impossible to establish a clinical diagnosis at present. In my experience the only useful treatment is to keep the lips constantly anointed with grease, such as a mixture of hydrous wool fat and petrolatum. This prevents the patients constantly moistening the lips with the tongue and affords protection against light, wind, etc.

Dr. Fred Wise: The possibiliy of cheilitis from sensitization to tobacco, as recently pointed out by Greenbaum of Philadelphia, should be borne in mind.

Dr. Louis B. Mount: I have had a similar case, that of a traffic policeman in Albany, whose condition was due undoubtedly to exposure to the sun.

Recurrent Edema in the Glabellar Region. Presented by Dr. Joseph J. Eller.

J. W., a man aged 39, complains of redness and swelling involving the skin above and between the eyebrows. There have been no subjective symptoms. The patient had a lesion removed from the forehead on Aug. 15, 1932, at the Stuyvesant Square Hospital. A microscopic diagnosis of basal cell epithelioma was made. The patient had a sunburn about three years ago which affected the forehead particularly. The swelling in the glabellar region appeared shortly afterward and has been recurrent ever since. The Wassermann test of the blood was negative. A differential blood count and the blood chemistry revealed nothing significant.

The patient has been given subfractional doses of roentgen rays and grenz rays as well as soothing lotions. There was no improvement of the condition.

He was referred to Dr. Wright for examination of the capillaries. The capillaries were increased in number and active and showed moderate dilatation. Dr. Wright reported as follows: "It seems likely that this edema is on the basis of a local lymphatic stasis. Whether this is secondary to the former lesion of the forehead, or whether the lymphatic structure suffered irreparable damage at the time of the severe sunburn some years ago, it is impossible to establish. The increase in capillary circulation, we should judge, is secondary to the various types of therapy."

DISCUSSION

Dr. Max Scheer: The condition may possibly be chronic dermatitis with edema due to sensitization to light.

Dr. George M. MacKee: I think it is chronic or recurring streptococcic lymphangitis, probably secondary to a focus of infection. Erythema solare may be edematous, may improve and get worse and may last for several months, but

it would not last for several years and the remissions and exacerbations would not be so marked as in this case.

DR. FRED WISE: I have no definite diagnosis to offer, but I have read recently of several instances of circumscribed edema associated with hypothyroidism.

DR. LUDWIG OULMANN: The patient gives a history of a severe sunburn three years ago while in Florida, which may have been the cause of lymph stasis.

ADENOMA SEBACEUM, BALZER'S TYPE. Presented by DR. MAX SCHEER.

Mrs. R. B., aged 41, has had lesions on her face since infancy. There have never been subjective symptoms. On the forehead, nose, chin and cheeks are numerous lesions, most of them isolated, some confluent, varying in size from that of a pinhead to ⅛ inch (0.3 cm.) in diameter. They are skin-colored, firm and elevated. There are a few pigmented moles on the face.

The biopsy report was adenoma sebaceum.

DISCUSSION

DR. DAVID L. SATENSTEIN: The diagnosis cannot be established by the microscopic observations alone; they must be considered with the clinical findings.

DR. MAX SCHEER: The histologic picture is typical of adenoma sebaceum.

LICHEN PLANUS OF THE FACE. Presented by DR. PAUL E. BECHET.

A. H., a man aged 36, states that the eruption first appeared on his hands four months ago and soon spread to the face. There are three or four typical violaceous polygonal papules on the back of each hand. The penis is also the site of one or two lesions, and the face and the upper part of the neck are covered by aggregated papules, forming large patches running well up into the cheeks. These conglomerate patches are 6 by 12 mm. and symmetrically distributed. There are no lesions in the mouth. The case is of interest because of the localization on the face.

DISCUSSION

DR. FRED WISE: I agree with the diagnosis as presented.

DR. PAUL E. BECHET: The patches on the face are not scaly. They are violaceous, raised and infiltrated.

ELEPHANTIASIS OF THE SCROTUM. Presented by DR. M. B. PAROUNAGIAN.

J. G., a man, aged 27, single, born in France, has been in this country for three and one-half years. Since then he has always lived in New York City. At no time has he lived or traveled in the tropics. He denies having had any venereal infection. One and a half years ago he noticed a swollen gland in the left inguinal region, which disappeared without treatment. About one year ago the scrotum began to enlarge, gradually reaching its present size, which is about that of an average grapefruit.

The patient came to the dermatologic clinic on July 28, 1933. His Wassermann reaction was 4 plus. It was learned that he had a similar reaction in June, 1933, after which he received one injection of a bismuth preparation. The blood count showed: hemoglobin, 88 per cent; red cells, 4,870,000; white cells, 7,600; polymorphonuclears, 55 per cent; lymphocytes, 41 per cent; transitionals, 2 per cent, and eosinophils, 2 per cent. A blood smear on July 21, 1933, revealed Filaria. The nonprotein nitrogen of the blood was 37.5 mg. per hundred cubic centimeters, and the blood sugar, 115 mg.

After six injections of neoarsphenamine and five of mercuric salicylate, the Wassermann reaction became negative, though there was no improvement in the local condition. The patient has since received two more injections of neoarsphenamine and four of mercuric salicylate without clinical amelioration. His general

physical condition is normal except for tremendous enlargement of the scrotum and enlargement of the penis with retraction of this organ, a few firm nodes in the inguinal regions and slight enlargement of the prostate.

DISCUSSION

DR. LOUIS B. MOUNT: Has an examination of the blood been made?

DR. LUDWIG OULMANN: As soon as Filaria comes into the blood stream, there is usually fever. Without more proof, I should not accept the diagnosis as presented. In 1907 I translated Professor Tanaka's paper on filariasis. There is usually chyluria with or without blood in the urine. When filaria enters the blood there is a rise in temperature as well as a changed blood picture. The thighs are affected by lymphedema. In this case there is merely elephantiasis of the scrotum.

DR. M. B. PAROUNAGIAN: The patient was sent to my clinic from the wards with a positive diagnosis of filaria and with a report of a positive Wassermann reaction, which was checked by us.

MYXOMA OF THE CHEEK. Presented by DR. LUDWIG OULMANN.

A. D. C., a man aged 28, noticed a "pimple" on the left cheek about six months ago, which gradually grew larger. It came out of the cheek as a small horn, and he felt a swelling in the cheek with his tongue. His physician burned and scraped the lesion three times but sent him back to the clinic on account of recurrence of the tumor. One of my assistants attended him for three weeks. He described the lesion as a cutaneous horn, which had fallen off before I saw it. Owing to the tumor-like mass in the cheek, I could not agree with this diagnosis. I applied a placebo for one week, and when the patient returned there were two pea-sized, waxy-looking excrescences grown together and held tight by the enclosing skin. After separating these from the skin and removing them, I removed the mass in the cheek with a sharp spoon. Biopsy proved the gelatinous masses to be myxomas of the hyaline type. They looked like cystic tumors. A test for mucin was positive. Under high voltage roentgen treatment the wound closed, and the tiny scar now present was left. There has been no relapse in the past two months.

DISCUSSION

DR. LUDWIG OULMANN: The patient gives no history of any preceding hardness or other change at the site of the lesion. There was no change in sensation. It is hard to prove whether or not such a tumor is primary.

M. B. PAROUNAGIAN, M.D., *Secretary*

Nov. 14, 1933

HOWARD FOX, M.D., *Chairman*

MYCOSIS FUNGOIDES. Presented by DR. DAVID L. SATENSTEIN.

J. C., a white man, aged 47, married, has an irrelevant family history. The physical examination, except for "asthma" of four years' duration, revealed only cutaneous changes.

The condition started in October, 1926, with large, irregular, reddish patches across the shoulders and on the upper part of the back. Later similar lesions appeared on the front of the trunk and on the arms and legs. Itching was present during the first three months. The original patches disappeared spontaneously about six months after the onset. In June, 1932, a fairly large tumor appeared

on the anterior part of the right shoulder and another below the right knee. In May, 1933, a diagnosis of mycosis fungoides was established at the clinic for cutaneous diseases of the New York Post-Graduate Medical School and Hospital. Since then, the patient has been examined in the Jersey Medical Center, service of Dr. W. Sachs. The routine medical examination gave negative results.

The clinical picture is unchanged aside from the lesion on the right thigh. This is now a deep red ulcerated, fungating mass which bleeds easily. Microscopic examination substantiated the diagnosis of mycosis fungoides. The outstanding feature of this case is that in spite of the persistence of the lesions there have been no subjective symptoms, notably no itching, except during the first months.

DISCUSSION

DR. ISADORE ROSEN: It is interesting to see the various types of mycosis fungoides. In most cases the itching is the most prominent and most annoying symptom, even when there are few lesions. This patient presents large fungating tumors, but the itching is practically negligible.

DR. MIHRAN B. PAROUNAGIAN: I have never seen mycosis fungoides with so few lesions at this stage, but I do not dispute the diagnosis, which was confirmed by microscopic observations.

A CASE FOR DIAGNOSIS (NODULE ON THE RIGHT CHEEK). Presented by DR. MIHRAN B. PAROUNAGIAN.

Miss C., aged 28, has had lupus erythematosus of the right side of the face and the right ala nasi for seven years. There is also a large atrophied, scarlike patch on the anterior portion of the scalp. She was treated by local physicians and by a dermatologist in New York. She received local applications of various substances, including carbon dioxide snow and sodium gold thiosulphate, which resulted in improvement but did not prevent recurrence. She came under my care on March 11, 1933. Since then she has received twelve injections of a gold compound. When first seen she presented a warty patch on the right ala nasi, which has shown no change under treatment. During the treatment a similar growth appeared in the center of the cheek. This lesion is about the size of a bean, elevated and slightly warty.

DISCUSSION

DR. GEORGE C. ANDREWS: I treated this patient for lupus erythematosus of the scalp and face irregularly for three years by injections of gold preparations and applications of carbon dioxide snow. Those lesions were typical of lupus erythematosus. The lesion on the right cheek looks like keratosis. It should be examined microscopically to determine whether it is a malignant process or a manifestation of lupus. I believe that it is simple keratosis. The Wassermann reaction was negative when the patient was under my care.

DR. LUDWIG OULMANN: The nodular eruption cannot be lupus erythematosus. The lesions on the nose are granulomatous, and the lesion on the cheek is similar. These lesions require more careful examination in order to establish the proper diagnosis.

DR. PAUL E. BECHET: It might be well to ascertain whether the patient has been taking bromides or iodides.

DR. FRED WISE: At present there are no changes to justify a diagnosis of lupus erythematosus.

DR. ANDREW J. GILMOUR: Clinically speaking, if I were to see the cheek alone, I should think of ioderma or bromoderma.

DR. GEORGE M. MACKEE: It is difficult to make a diagnosis at present. The scar on the scalp probably is the result of lupus erythematosus, but it may be due to some other cause. The lesions on the face are unilateral and consist mostly of scars grouped in a semicircle, some of which are crateriform. There is some

telangiectasia, which may represent lupus erythematosus or may have been caused by treatment with roentgen rays or radium. The lesion on the cheek looks like keratoma of the senile variety. The lesion on the nose suggests verrucous keratosis or granuloma. It is probable that the case is one of lupus erythematosus on which keratosis is developing, or even epithelioma, although other conditions, such as an eruption caused by bromides or iodides and syphilis, should be considered.

DR. MIHRAN B. PAROUNAGIAN: If the members had seen the patient when I first saw her, they would all accept the diagnosis of lupus erythematosus. She gives no history of taking drugs. The nodular condition has appeared since early summer. When I first saw her there was no lesion on the right cheek. She has received no local treatment. I have no doubt that the diagnosis of lupus erythematosus is correct, but I have not been able to determine the nature of the lesion on the cheek. I shall try to get a specimen for biopsy from it and report later. Dr. Andrews reported that the Wassermann reaction was negative.

A CASE FOR DIAGNOSIS (PUSTULAR ERUPTION OF THE PALMS AND SOLES). Presented by DR. GEORGE C. ANDREWS.

Mr. W., a man, aged 47, has an eruption which began on both palms almost simultaneously in September, 1929. Two months later the eruption appeared on the soles, chiefly under the arches. Some of the lesions were vesicles at first but they rapidly developed into pustules, the latter becoming predominant. The pustules spread gradually from the centers of the palms to the thenar eminences and extended over the entire midportions of the soles and onto the sides of the feet for a short distance. As the patches spread a dull erythema with exfoliation appeared, which was limited to the involved areas. There were periodic exacerbations, with active formation of pustules, followed by remissions.

Cultures and mycologic examinations gave negative results. The blood contained 15,400 white cells per cubic millimeter, with the following differential count (average 200 cells): polymorphonuclears, 69.5 per cent; lymphocytes, 25 per cent; large mononuclears, 1.5 per cent; eosinophils, 3 per cent; basophils, 0.5 per cent, and transitional cells, 0.5 per cent. Inoculation of guinea-pigs with material from the pustules gave negative results.

Biopsy showed a pustular dermatitis with marked hyperkeratosis and a prominent granular layer, moderate parakeratosis, edema and a slight infiltration of the epithelium by polymorphonuclears. The most prominent feature was a large intraepithelial pustule about which was pronounced acanthosis. The floor of the pustule was composed of a thin layer of stratified squamous epithelium, and the roof, of keratinized epithelium. In the contents of the pustule were many polymorphonuclears and degenerated dyskeratotic epithelial cells. Basophilic fibers were noted. No organisms were recognized. The corium in the region of this pustule, particularly beneath the floor, presented a chronic inflammatory reaction. Another biopsy showed similar characteristics.

After treatment for eight months with numerous remedies the condition subsided as a result of injections of boiled milk given in large doses (10 cc.). There was a recurrence about six months later, at which time the patient was treated elsewhere. Later he came back to me and I searched for foci of infection. He had six diseased teeth, severe pyorrhea and infected tonsils. Three weeks after the diseased teeth were extracted the eruption cleared, but it later recurred.

DISCUSSION

DR. GEORGE M. MACKEE: It is not easy to differentiate between dermatophytid or dermatophytosis, and Barber's pustular psoriasis when the eruption is limited to the palms and soles. Dr. Andrews, in a paper read at the last meeting of the Section on Dermatology and Syphilology of the American Medical Association, stated that in his opinion most of these cases are neither psoriasis nor dermatophytosis—that they represent a pustular eruption peculiar to the palms and soles and that many of them are due to pyogenic foci in other parts of the body. In the

discussion, I was the only one who expressed a contrary opinion. Last year I presented a patient with pustular psoriasis of the palms and soles at a meeting of the New York Dermatological Society. The eruption was identical with the type that Dr. Andrews had been studying. Dr. Highman agreed with the diagnosis both clinically and histologically. Yet when he discussed Dr. Andrew's paper he said that these cases could not be accepted as psoriasis.

I have studied this question for many years and have investigated a large amount of the material dealing with the subject. It is my conviction that it is possible to establish a diagnosis of pustular psoriasis of the palms and soles clinically in many cases, and to differentiate the eruption in most instances from dermatophytosis, pyodermia, Hallopeau's acrodermatitis, pompholyx and dermatitis repens. In the present case the last three conditions can be ignored.

Pustular psoriasis is usually limited to the palms or the soles or to both. It is characterized by remissions and exacerbations. During an exacerbation there is a large number of tiny, deep-seated pustules, both discrete and confluent. Occasionally the pustules are large. There may be considerable acute inflammation. The lesions are clinically pustules from the beginning—not vesicles which may change to pustules, as in dermatophytosis. It often requires careful clinical observation to determine this feature, which is important in differentiation. During the stage of remission there is usually a squamous eruption which suggests ordinary inveterate psoriasis of the palms and soles.

The pustules are always sterile, which should deny the condition a place in the pyodermic group, where Dr. Andrews seems to be trying to place it. Fungi are not found in the scales or in the walls of the pustules, although they may be found between the toes and the patient may show a positive reaction to fungus extracts.

The nails are frequently involved, and patches of ordinary psoriasis are often noted on other parts of the body. Occasionally there is a familial history of psoriasis. The condition is exceedingly stubborn in responding to treatment.

The histologic changes do not conform to those of typical psoriasis. Often they do not even suggest psoriasis. But when the biopsy is taken during a remission the histologic picture is often more suggestive of psoriasis than of eczema.

If Dr. Andrews succeeds in modifying some of the eruptions by removing foci of infection, he will be doing what has been done for many years in treating psoriasis. The same is true of protein therapy. As concerns therapeutic stubbornness, ordinary psoriasis is capricious. At one extreme are eruptions that will disappear under almost any treatment; at the other extreme are lesions that no treatment can modify. It is well known that psoriasis can remain localized on the nails, on the scalp, behind the ears or on one elbow for years before becoming generalized; in fact, it may never become generalized.

The more thought I give to the eruptions that have so deeply interested Dr. Andrews, the more I am convinced that, as Barber has maintained, they are psoriasis pustulosa. I agree that not all pustural eruptions of the palms and soles are psoriasis, but I think that pustular psoriasis can be differentiated from similar conditions on clinical evidence alone. I believe that the patient just presented has pustular psoriasis. He has a squamous eruption with pustules and stippling of the nails. Dr. Andrews said that the individual lesions are at first vesicles, later becoming pustules. This is important and should be checked on by observing the early stage of an exacerbation instead of depending on what the patient thinks.

DR. ISADORE ROSEN: For twenty years I have been interested in this type of cutaneous manifestation. I agree with Dr. MacKee that this patient has psoriasis. As a rule one does not make the diagnosis on the first examination, because often the lesions resemble those in fungous infections. However, considering the negative mycologic observations and the clinical picture—the sharply outlined lesions, the erythematous base, the typical micaceous scaling in some areas, especially in the absence of treatment for a few weeks, the resistance to all

types of therapy and the occasional evidence of psoriasis elsewhere on the trunk or on the nails—the diagnosis of psoriasis is unquestionable. I am not inclined to lay too much stress on the histologic picture in these cases.

DR. DAVID L. SATENSTEIN: Clinically, these eruptions do not suggest psoriasis, and histologically, aside from being an inflammatory process, they have nothing in common with that condition. They are called psoriasis for want of proper understanding of the pathologic process.

DR. LUDWIG OULMANN: I am treating a patient with an eruption of this type. The case is interesting because the question of compensation is involved. A baker injured his right hand, after which a pustular eruption developed on that hand, later involving the palm of the left hand and both soles. I agree with Dr. Andrews that these eruptions form an entity and are different from those described by Barber and Eberth. I have not seen any psoriasis. While the inflammatory acanthosis may show a resemblance to that disease, the reaction to treatment is entirely different. I do not believe, however, that these eruptions are always caused by focal infection.

DR. PAUL E. BECHET: It may be possible for psoriasis limited to the palms and soles to become pustular, but to describe pustular psoriasis as a clinical entity is a little premature.

DR. FRED WISE: I agree with Dr. MacKee. The geometric stippling of the nails, among other features, leads to that diagnosis. The history as to heredity and familial occurrence should be investigated.

DR. HOWARD FOX: Psoriasis is one of the few cutaneous diseases having a characteristic histologic structure. As neither the clinical appearance nor the histologic changes in this case are those of psoriasis, it hardly seems warranted to consider this the proper diagnosis.

DR. GEORGE C. ANDREWS: The condition may be pustular psoriasis, but at present I do not want to classify it as such. Clinically the patient has never had psoriasis. I am not sure that Barber would classify this case in the group which he described. The family history has not been gone into thoroughly, but I have questioned many members of the family and have found no history of psoriasis. None of my eighteen cases have shown typical psoriatic lesions. In one case patches of erythema were present on the elbow and scalp for about two weeks and then disappeared. In four cases there were changes in the nails. None of these manifestations, however, was typical of psoriasis. I do not deny that pustular psoriasis of the palms and soles is a disease entity, but I wish to point out that not all cases of pustular eruption of the palms and soles should be classified as pustular psoriasis. The histologic evidence is inadequate to indicate the diagnosis of psoriasis in the cases which I have described. Clinically the lesions do not look like those of psoriasis, and they do not respond to treatment for psoriasis. I still believe that the condition should be called a pustular eruption of the palms and soles of unknown etiology, except in those cases in which the histologic picture is typical of psoriasis or in which other psoriatic lesions exist.

A CASE FOR DIAGNOSIS (SARCOID? RADIODERMATITIS? EPITHELIOMA?). Presented by DR. PAUL E. BECHET.

G. R., a woman, aged 66, first noticed a reddened papule at the inner canthus of the right eye six years ago. Three years later she was given a single undetermined dose of roentgen rays, which after several weeks caused considerable inflammatory reaction. Four months ago a new lesion similar to the original papule appeared on the left side of the nose. Examination reveals a red infiltrated patch about 2 mm. in diameter at the inner canthus of the right eye; in the center is a depressed cicatrix (the result of removal of a specimen for biopsy), and around that is a rounded, pearly-bordered, crateriform spot with an irregular contour that is strongly suggestive of epithelioma. Part of the patch seems to be atrophic, with here and there dilated arterioles. The lesion on the left side of

the nose is frankly nodular and typical of sarcoid of the Boeck type. A biopsy on the older lesion, performed at another hospital, revealed endothelial and giant cells.

DISCUSSION

DR. H. J. F. WALLHAUSER: I agree with the diagnosis of sarcoid for the lesion on the right side. The lesion on the left side, however, lacks the typical bluish-red color and seems to be limited to the epidermis. Epithelioma should, therefore, be considered.

DR. GEORGE M. MACKEE: The lesion on the left side may be sarcoid. The eruption on the right side looks like lupus erythematosus. I do not think that there are any sequelae of the roentgen treatment.

DR. HOWARD FOX: There is no evidence, in my opinion, of roentgen dermatitis. It is unusual to see telangiectasia even after a large dose of roentgen rays has been administered to a small area, as in this case.

DR. PAUL E. BECHET: The lesion on the left side is a typical sarcoid. I believe that the older lesion is also a sarcoid, but it is atrophic in certain areas, with here and there some telangiectasia, suggestive of roentgen dermatitis.

GENITAL CHANCRE WITH MULTIPLE EXTRAGENITAL CHANCRES. Presented by DR. MIHRAN B. PAROUNAGIAN.

J. N., a laborer, aged 42, was admitted to the clinic for cutaneous diseases of Bellevue Hospital on Oct. 25, 1933, with a lesion on the shaft of the penis which appeared four weeks previously. The last exposure to infection took place before the appearance of the penile sore. About two weeks after he first noticed the penile sore, two sores developed simultaneously on the right index finger, one after a nail puncture and the other after a burn with a cigaret. Four days later a lesion developed at the base of the nail of the middle finger of the right hand.

He presents: (1) a large, circumscribed, round sore on the shaft of the penis near the base, about the size of a five-cent piece; (2) a dark red circular lesion the size of a dime and sharply circumscribed, on the palmar aspect of the right index finger near the tip; (3) a sharply outlined lesion, similar to that on the palmar aspect but smaller, on the dorsal aspect of the right index finger, and (4) a semilunar ulceration involving the cuticle and also apparently the nail bed of the right middle finger. All four lesions showed spirochetes in dark-field illumination.

The patient has a generalized macular eruption and adenopathy. The Wassermann reaction was 4 plus.

A CASE FOR DIAGNOSIS (PAGET'S DISEASE OF THE NIPPLE? ECZEMA?). Presented by DR. J. FRANK FRASER.

M. P., a woman, unmarried, aged 31, gives a history of an eczematous eruption on the left nipple for one and one-half years. Before the patient came to the Cornell Clinic of the New York Hospital she received eleven roentgen treatments (¼ skin unit dose each) without beneficial results. The clinical picture and the history justify the diagnosis of Paget's disease, but the microscopic observations are not typical of this condition. More sections will be examined, and a report will be made at the next meeting.

NOTE.—Later microscopic study confirmed the diagnosis of Paget's disease of the nipple.

DISCUSSION

DR. GEORGE M. MACKEE: I do not hesitate to make a diagnosis of Paget's disease. The negative histologic observations merely mean that the biopsy specimen did not include the diseased tissue or that serial sections were not examined. I suggest that the entire block be cut and carefully examined. If this gives nega-

tive results, I should take another specimen for biopsy, selecting the site with care and including all or part of the nipple, going deep enough to obtain some of the lactiferous ducts. One of my patients had typical Paget's disease, the diagnosis being confirmed microscopically. The breast was removed. A general pathologist stated that there was no Paget's disease. Dr. Satenstein examined various portions of the tissue. Many portions, of course, were free from disease, but in several areas we found typical Paget's disease. In fact, I have had a number of patients in whom the general pathologist failed to make a diagnosis of Paget's disease because he failed to examine enough tissue.

I am so certain of the diagnosis in Dr. Fraser's case that I advise removal of the breast and careful histologic examination even if he fails to establish the diagnosis of Paget's disease by biopsy.

DR. LOUIS B. MOUNT: The clinical appearance is that of Paget's disease, and I should remove the breast. I followed a case at the clinic in which the condition looked like eczema. By the time surgical intervention was performed all the characteristics of Paget's disease were present, and the whole breast was infiltrated.

DR. ANDREW J. GILMOUR: As Dr. MacKee pointed out, there is retraction of the nipple and the area surrounding it is hard and button-like. There is a marked difference in consistency between the affected area and the nipple and areola of the other breast. I favor amputation of the breast.

DR. DAVID L. SATENSTEIN: The time for biopsies is over. The condition should be considered from the therapeutic standpoint only. I advise removal of the breast followed by roentgen therapy.

CLEVELAND DERMATOLOGICAL SOCIETY

J. R. DRIVER, M.D., *Reporter*

Regular Meeting, Oct. 26, 1933

SIDNEY LITTMAN, M.D., *Presiding*

A CASE FOR DIAGNOSIS. Presented by DR. W. H. CONNOR.

This Negro, aged 27, was admitted to the service of Dr. Cole and Dr. Driver at the Cleveland City Hospital on Aug. 1, 1933. He states that he had typhoid in 1914 and gonorrhea in 1925 and that following a chancre in 1927 he received twenty-six intravenous injections. In June, 1933, eight days following coitus, a small lesion developed on the prepuce. Two weeks later a papulosquamous eruption appeared on the scrotum, and a little later some vesicular, crusted lesions on the lips. On admission to the hospital the lesions on the scrotum resembled a crusted, subacute dermatitis. There were some crusted lesions on the lips, and a few vesicular lesions were present on the trunk and the upper extremities. There were practically no subjective symptoms. Because of a 4 plus Wassermann reaction the patient was given antisyphilitic treatment consisting of arsphenamine and thiobismol. Typhoid vaccine was also given. No improvement resulted. There is now a crusted, somewhat scaly papular eruption involving chiefly the forearms, thighs, buttocks, lower part of the back, lower part of the abdomen and genitalia. There is little evidence of acute inflammation. The lesions have a tendency to be grouped. There is no involvement of the mucous membranes and no significant lymphadenopathy. General physical examination otherwise revealed nothing abnormal. The Wassermann and Kline tests of the blood were strongly positive on two occasions. Examination of the spinal fluid yielded negative results. Search for

Acarus scabiei did not disclose this organism. A tuberculin test with a dilution of 1 : 10,000 was mildly positive. A specimen taken for biopsy was reported as showing chronic inflammation, which is not inconsistent with the diagnosis of syphilis.

DISCUSSION

DR. JOHN RAUSCHKOLB: The patient has proved resistant to all the types of therapy that have been employed. At the time of admission, a clinical diagnosis of secondary syphilis seemed tenable. I thought of keratoderma blenorrhagica on account of the psoriasiform character of some of the crusted lesions; erythema multiforme was also considered because of the vesicular lesions. However, it was impossible to demonstrate gonococci in smears, and the patient presents no rheumatic symptoms. I am inclined to believe that he has resistant secondary syphilis.

DR. H. J. PARKHURST: My impression is that the condition is resistant secondary rupioid syphilis, the primary lesion having been acquired in June, 1933.

DR. J. EDGAR FISHER: I favor a diagnosis of psoriasis because of the crusted, scaly lesions about the elbows.

DR. R. E. BARNEY: I favor a diagnosis of resistant secondary syphilis, although erythema multiforme cannot be entirely excluded.

DR. H. G. MISKJIAN: The presence of vesicles does not necessarily rule out the possibility of syphilis. I recall a patient observed at the Cleveland City Hospital several years ago who presented similar vesicular lesions, which later became papulosquamous syphilids.

DR. E. W. NETHERTON: I favor the diagnosis of resistant secondary syphilis and suggest malaria therapy.

DR. H. F. DEWOLF: On the patient's admission I did not feel that he had secondary syphilis because of definite vesicles on the skin somewhat resembling varicella, and the lesions were interpreted as being due to the treatment that the patient had applied. There is a history of previous syphilis, with considerable therapy; so a positive Wassermann test of the blood was not surprising. It is my impression that no lesions have appeared within the last week and that the condition possibly shows slight improvement. I believe that further intensive antisyphilitic treatment will be effective.

DR. H. N. COLE: The eruption practically disappeared under treatment, but it has recurred during the past ten days, with a tendency for new lesions to develop on other areas. Some of the lesions show a tendency to clear up in the center. Today the condition looks not unlike pityriasis rosea. On the lower limbs the lesions are more papular. Such cases have been reported in the literature as following antisyphilitic therapy with arsphenamine, and this condition may be a pityriasis rosea-like arsphenamine eruption.

DR. J. R. DRIVER: Dr. Cole and I have a patient who presented an eruption similar to this following arsenical treatment. It was thought at the time that we were dealing with pityriasis rosea. However, the eruption has persisted for several months and the patient still shows a positive Wassermann reaction. I feel that the patient presented today has a pityriasis rosea-like arsphenamine eruption.

SECONDARY SYPHILIS, BILATERAL BELL'S PALSY. Presented by DR. W. H. CONNOR.

This Negro, aged 23, from the service of Dr. Cole and Dr. Driver at the Cleveland City Hospital, complains of inability to move the face of two weeks' duration. The left side was involved first, and the right side, a few days later. There is also loss of taste sensation. He had gonorrhea three months ago. There is typical bilateral Bell's palsy, involving the upper and lower parts of the face. There is a button-like induration of the prepuce in the region of the frenulum, as well as marked bilateral, painless inguinal adenitis. Other cranial nerves show no definite involvement. The deep reflexes are present. The Wassermann test

of the blood was 4 plus on successive occasions. The spinal fluid gave a 4 plus Wassermann reaction with 1 cc. and a negative reaction with smaller quantities; it showed 1 cell; the Pandy test was slightly positive, and the mastic curve was 3332100000.

No therapy has been instituted.

DISCUSSION

DR. C. L. CUMMER: Have any physicians on the staff had a chance to look into the question of bilateral Bell's palsy? It is striking and interesting to see a bilateral case of this condition.

DR. JOHN RAUSCHKOLB: Over a period of years there have been a fairly large number of cases of Bell's palsy associated with early syphilis at the Cleveland City Hospital, but this is the first case of bilateral involvement.

TORULOSIS. Presented by DR. E. A. LEVIN.

R. G., a white man aged 59, from the service of Dr. Cole and Dr. Driver at the Cleveland City Hospital, gives an unimportant past history. His wife is living and well, and four children are also living and well. Two children died of epilepsy and pleurisy, respectively. Five years ago, while working in a foundry, the patient fell unconscious and was taken to the Evangelical Lutheran Hospital. He has since been in the Charity Hospital and the Lakeside Hospital at different times for a prolonged stay, without any relief. He complains of persistent headache, diplopia, debility and inability to walk. In the past two years, emesis has developed, the patient sometimes vomiting four or five times a day. The condition has remained the same for some time.

The patient is a debilitated and emaciated elderly white man unable to leave his bed. He is pallid and lethargic and unable to stand without assistance. The skin and mucosae show nothing abnormal. There is a purulent aural discharge. The roentgenogram shows evidence of destructive mastoiditis on the left side. General hyperreflexia is present. There are definite motor weakness on the right side and hypesthesia for gnostic and vital sensations on the left. There is some question of subarachnoid block. Routine studies of the blood, blood pressure and urine revealed nothing abnormal. The Wassermann test of the blood was negative on four occasions. The spinal fluid gave a negative Wassermann reaction on several occasions both recently and in the past. The cell count of the spinal fluid has varied from 73 to 280. The Pandy test has repeatedly been 4 plus. The mastic curve for three separate specimens was 3435555543; 2345555544, and 1234555555. Cultures of the spinal fluid show a yeastlike growth on Sabouraud's medium, and histologic sections of the brains of mice inoculated with the spinal fluid show definite evidence of Torula histolytica meningitis. The mice died three weeks after inoculation.

Only local and symptomatic treatment has been used. The course has been progressively down-hill.

DISCUSSION

DR. H. N. COLE: The condition, of course, is neurologic, but torulosis is of interest to the dermatologist because in certain of these patients the primary lesion is on the skin or the skin is secondarily involved. Urbach, of Vienna, reported a case in which the original lesion was on the upper jaw and the process soon extended to the lungs and brain and finally ended in death (*Arch. f. Dermat. u. Syph.* **162**:401, 1930). The work done by Dr. Levin in finally clearing up the diagnosis in a case that has puzzled the medical staffs of several hospitals is most commendable.

DR. E. A. LEVIN: My interest in this case resulted from an experience with a similar case seen in San Francisco some time ago. The disease is rare. Dr. Gross, of St. Luke's Hospital, has had a case showing involvement of the toes and of the brain. Treatment is very unsatisfactory, and none of the patients with proved cases have recovered. In most of the cases reported in the literature, the diagnosis was made at autopsy.

A Case for Diagnosis. Presented by Dr. E. W. Netherton.

This Jewess, aged 58, had a small "pimple" on the left posterior portion of the scalp. The lesion became crusted and enlarged and purpuric. The process gradually healed, leaving a reddish-brown discoloration of the scalp and marked thinning of the hair. I first saw her on Aug. 5, 1933. On the left posterior portion of the scalp there is a dark red to purplish area about the size of a palm. This lesion extends onto the glabrous portion of the neck and the back of the ear, where the margin is sharply demarcated. At the site of the original "pimple" there is an area about 0.5 cm. in diameter showing a depressed atrophic scar. On palpation this area is soft and compressible, giving the impression that it is quite vascular. The discoloration of the scalp cannot be removed by pressure. There is no tenderness. The patient has generalized arteriosclerosis and hypertension. Roentgen examination revealed a cloudy left antrum; no bony disease of the skull could be demonstrated. There is marked ptosis of the left eye, with no vision, and the roentgenogram revealed the possibility of a tumor of the left orbit. The Wassermann test of the blood was negative. A dextrose tolerance test showed a prediabetic state. The patient refuses to permit biopsy. No treatment has been given.

DISCUSSION

Dr. Benjamin Levine: The possibility of a tumor of the brain must be ruled out. Stereoscopic roentgen examination would help.

Dr. C. L. Baskin: The patient consulted me about ten months ago, and there has been little change in the condition, except that the edematous character of the scarred area was not present when I first saw her.

Dr. J. R. Driver: Examination of the central area of the lesion reveals a boggy, edematous condition, and one gets the impression that there is some periostitis of the skull. The entire picture could, I believe, be due to a low grade infection, perhaps streptococcic, the discoloration of the skin being caused by hemorrhage.

Dr. H. N. Cole: Two possibilities come to my mind, sarcoid and liposarcoma. I saw a patient with a similar lesion who had bilateral involvement of the cheeks. Biopsy revealed liposarcoma.

Dr. E. W. Netherton: I am sorry that I have been unable to secure a biopsy specimen. I think that the process is an unusual type of atrophy. There is a possibility of sarcoid or liposarcoma, and lupus erythematosus should be considered. So far as a tumor of the brain is concerned, there have never been any signs of intracranial pressure.

Lymphogranuloma Inguinale. Presented by Dr. W. H. Connor.

This Negress, aged 21, from the service of Dr. Cole and Dr. Driver at the Cleveland City Hospital, states that a swelling appeared in the left groin about Sept. 15, 1933, and increased in size and became somewhat tender. She also complains of headache, backache, malaise, chills, fever and some swelling and tenderness of the vulva. There is a swelling in the left inguinal region about 5 by 3 cm. The area is not fluctuant and is only slightly tender, and the nodes appear to be matted together by inflammation. The Wassermann test of the blood was negative on three occasions. The Frei test was weakly positive.

Treatment has consisted in rest in bed, local applications of heat and the administration of a total of 20 cc. of fuadin (a complex trivalent antimony compound) in five intramuscular injections given twice a week. No appreciable improvement has been noted.

Lymphogranuloma Inguinale: Anorectal Syndrome. Presented by Dr. W. H. Connor.

This Negress, 29 years of age, from the service of Dr. Cole and Dr. Driver at the Cleveland City Hospital, states that in 1925 she had an inflammatory disease

of the vulva and rectum and that abscesses in this region have been incised from time to time. In 1929 she was hospitalized in the Cleveland City Hospital, and several abscesses were incised and drained. There was elephantiasis of the labia majora at this time, and excision of the involved areas was performed. Since 1929, the patient states, numerous perirectal sinuses have developed and persisted, along with a gradually developing rectal stricture, and recently discharge from these sinuses has increased in amount. The patient has lost greatly in weight, is emaciated and for several months has had low grade fever.

There are marked hypertrophy of the labia, with several draining sinuses, and a marked vaginal discharge. There is marked brawny induration of the perianal region and the buttocks, with numerous sinuses discharging a grayish, purulent material. Rectal examination revealed a dense fibrotic structure which would admit only the tip of the index finger. Aside from the emaciated and debilitated condition of the patient, general physical examination revealed nothing of importance. The Wassermann test of the blood was negative on three occasions. The Frei test was negative with two different antigens. Treatment has consisted of five intramuscular injections of fuadin, (a complex trivalent antimony compound), a total of 20 cc. No improvement has been noted.

LYMPHOGRANULOMA INGUINALE, CHANCROID AND GONORRHEA. Presented by DR. W. H. CONNOR.

This white man, aged 25, from the service of Dr. Cole and Dr. Driver at the Cleveland City Hospital, states that acute gonorrheal urethritis developed about six weeks ago. Two weeks later he noticed an ulcer the size of a split pea on the prepuce, which was associated with considerable tenderness. About ten days after the appearance of the ulcer he noticed a swelling in the left inguinal region. There is now a healing penile ulcer 1 cm. in diameter on the prepuce, rather superficial and without induration. There is adenitis of the left inguinal region, with a tendency for the nodes to become matted together and attached to the overlying skin. No fluctuation can be noted. Dark-field examination of the penile lesion did not disclose Spirochaeta pallida. Smears examined for Donovan's organisms revealed none. Smears from the ulcer examined for the Ducrey bacillus were positive. Smears from the urethra were positive for gonococci. The Wassermann test of the blood was negative on five occasions. The Frei test was positive.

DISCUSSION

DR. H. N. COLE: There are several features of interest in this group of cases of lymphogranuloma inguinale. One patient is a woman with involvement of the inguinal nodes, which is uncommon, this being the fourth example of such involvement in a female that my associates and I have seen. The other female patient presents a typical anorectal syndrome of lymphogranuloma inguinale, sometimes called esthiomene. This condition is considered rare, but in our experience it is rather common. This patient was under observation in the Cleveland City Hospital several years ago, and her condition at that time was incorrectly diagnosed as granuloma inguinale. Of interest in this case, moreover, is the negative Frei test. Because of this, one might raise the question whether the condition may be one of the anorectal syndromes seen in late syphilis and resistant to antisyphilitic therapy, which were described by Fournier. I am of the opinion, however, that it is a characteristic anorectal syndrome of lymphogranuloma inguinale. The negative Frei test can be explained by the extremely debilitated condition of the patient and the presence of anergy.

DR. E. W. NETHERTON: What is the average size of a primary lesion of lymphogranuloma inguinale, and how long does it usually remain?

DR. H. T. PHILLIPS: In the case of the man with the penile lesion, I should expect to find more destruction if chancroidal infection were present. The appearance as seen today seems to be the result of a healing process.

DR. W. H. CONNOR: In most instances the primary lesion of lymphogranuloma inguinale is evanescent. Many of the lesions disappear at the end of two or three days. In some instances a lesion may be present for two or three weeks. I believe that the penile lesion under discussion is a combination of chancroid and lymphogranuloma inguinale.

NEW YORK ACADEMY OF MEDICINE, SECTION OF DERMATOLOGY AND SYPHILIS

EUGENE TRAUB, M.D., *Secretary*

Regular Meeting, Nov. 8, 1933

LEO SPIEGEL, M.D., *Chairman*

ERYTHEMA INDURATUM. Presented by DR. JESSE A. TOLMACH.

A. C., a woman aged 21, born in the United States, a housewife, was first seen at the Stuyvesant Square Hospital on Jan. 22, 1932, complaining of an eruption on the legs. There were many small and large violaceous indurated lesions, some with central necrosis and others definitely ulcerated. There were many scarred areas on the legs and thighs. The condition had been present without remissions for three years. The patient was given an ointment containing sulphonated bitumen 3 per cent, but owing to her work she could not attend the clinic. The status of the lesions remained more or less stationary until September, 1932, when she became pregnant, whereupon all the lesions healed. They remained healed until the birth of her child in June, 1933. The indurated necrotic and ulcerated lesions then reappeared, and this time some of the lesions were arranged in a serpiginous form. Examination of the lungs showed lesions in both apexes, more marked in the left. The blood pressure was low (95 systolic and 70 diastolic).

The blood count and the urine were normal; the Wassermann reaction of the blood was negative. Tuberculin tests with dilutions of 1:1,000, 1:10,000 and 1:100,000 were markedly positive. Roentgen examination of the chest showed the heart, aorta and diaphragm to be normal in appearance.

Biopsy showed a very irregular epidermis which in one place was replaced by an ulcer. The prickle cells were swollen, and the basal cells were distorted. In the area of ulceration there was an inflammatory reaction accompanied by much necrosis. Scattered throughout the entire depth of the section there was dense round cell infiltration. The endothelial lining of the blood vessels in many places was swollen. Only a few vessels were surrounded by an increased amount of connective tissue stroma. The exudate consisted of lymphocytes, endothelial cells and some giant cells.

DISCUSSION

DR. GEORGE C. ANDREWS: This is an unusually extensive eruption, but I agree that the clinical diagnosis is erythema induratum.

DR. SAMUEL PECK: Was a histologic section taken from the large lesion? It suggests Bazin's disease. However, the small lesions in the vicinity look much like papulonecrotic tuberculids.

DR. ISIDORE ROSEN: The clinical features in this case do not coincide with those of Bazin's disease. The lesions are small and superficial. Many of them show coalescence and marked inflammatory changes in the skin. There are small embolic foci here and there, as evidenced by the superficial ulcerations. I believe that the patient is suffering from a nontuberculous vascular process, periphlebitis or periarteritis nodularis necroticans.

DR. WALTER HIGHMAN: Irrespective of the clinical designation, is it agreed that the condition is tuberculous?

DR. MARION B. SULZBERGER: Yes.

DR. WALTER J. HIGHMAN: If a pathologist removed a lung from a tuberculous patient at autopsy and on gross examination found in it large consolidations, small ones, caseated areas and small lesions breaking down in the vicinity of the larger ones, would he haggle about whether the condition was tuberculous and what each lesion meant? This patient has tuberculosis of the skin, and no pedantry can alter the fact.

DR. SAMUEL PECK: I agree in spirit with what Dr. Highman has said, but I think it is important to make a distinction between the different types of tuberculids rather than to group them all under the same designation. When the diagnosis of chronic papulonecrotic tuberculids is made, one should look for active tuberculosis in some internal organ. While Bazin's disease and granuloma annulare are usually of tuberculous origin, one is not likely to find active tuberculosis in some internal organ.

DR. WALTER J. HIGHMAN: Theoretically I agree with Dr. Peck. I have asked physicians other than dermatologists who have large services for the treatment of general tuberculosis how often in cases of visceral tuberculosis they have seen cutaneous manifestations. They replied that in thousands of cases such manifestions were so rare that they could not generalize about them. There are only a few ways in which the tubercle bacilli can reach the skin: by direct extension, by direct implantation and by way of the circulatory system. I shiver when I read Lewandowsky's work on tuberculosis of the skin, because it is so involved and so profound in its hair splitting.

DR. BOLESLAW LAPOWSKI: Lubarsch, a year before his death, stated that no histologic examination can make sure the diagnosis of tuberculosis; the only certain criterion is the presence of the tubercle bacillus.

DR. JESSE A. TOLMACH: The reactions to tuberculin were markedly positive with dilutions of 1:1,000, 1:10,000 and 1:100,000; this points more to erythema induratum than to papulonecrotic tuberculids. The patient is presented not so much for suggestions as to diagnosis as because of the interesting history. The condition healed completely as soon as she became pregnant and recurred with great severity immediately after the birth of the child.

MILIARY DISSEMINATED LUPOID (SARCOID). Presented by DR. HERMANN FEIT.

S. S., a woman aged 48, Russian, has a maculopapular rash which began on the right cheek four or five months ago and spread down the cheek and below the chin to the other cheek. The rash has itched slightly at times. No medication has been used except ointment of rose water.

The eruption consists of brownish-yellow nodules about the size of a pinhead, closely set in the regions mentioned. Some of the nodules are shiny, and some, scaly. Diascopy shows them to be less transparent than those of lupus.

Roentgen examination of the chest showed a collection of old calcium deposits in the apexes of the lungs, with streaky shadows running up to these regions from the hili. There was no evidence of fresh infiltration. Tuberculin tests with dilutions of 1:1,000 and 1:10,000 were negative.

Biopsy showed a superficial pustule with degenerated epithelium beneath it. The corium beneath this site showed an acute inflammatory reaction. A few polymorphonuclears and numerous lymphocytes were seen. About this area in the superficial corium were seen a number of small epithelioid tubercles, some in relation to the follicles. Some of the epithelioid cells were arranged in strands about the blood vessels. This arrangement suggested sarcoid. The other features, however, seemed more consistent with a diagnosis of lupus miliaris disseminatus. The histologic diagnosis was lupus miliaris disseminatus.

DISCUSSION

DR. HERMANN FEIT: I selected the old name "lupoid" purposely in contradistinction to "miliary disseminated lupus." The most interesting feature of the

condition is that all the lesions are in the same stage of evolution, being small, hemispheric, brownish, slightly scaly, semisoft papules which are so closely set that they could be taken for a dermatitis. There is no pustulation or ulceration. Vitropression shows brownish spots which are less transparent than the apple jelly nodules of lupus. The tuberculin test was negative with two dilutions.

FOLLICULITIS DECALVANS ET ATROPHICANS (LITTLE). Presented by DR. PAUL GROSS.

This colored boy, aged 8, has had an eruption for as long as his mother can remember. It has caused slight itching, and there is more discomfort during the winter. He has had some sores on the scalp, after which the hair fell out in areas. His general health has been fair. There is no family history of a similar condition.

The entire body is covered with minute follicular papules which give the feeling of a grater. Over both patellae is a heavy ichthyotic scaling. There are similar follicular papules on the scalp beside small, irregular areas of alopecia. In the areas of alopecia many follicles have disappeared, but there is no definite atrophy.

Repeated examinations for fungi of material from the scalp have given negative results. Examination with Wood's filter showed no fluorescence.

DISCUSSION

DR. PAUL GROSS: I presented this boy because his cutaneous condition seems to conform to the disease to which McCafferty called attention and which was described originally by Graham Little. The disorder is like the follicular type of ichthyosis with secondary changes of lichen spinulosus leading to alopecia of the scalp. McCafferty's discussion does not arrive at any conclusion as regards the underlying eruption.

DR. EUGENE TRAUB: Dr. Tolmach and I reported a case such as this a few years ago, placing the condition in the classification set down by Graham Little. Shortly after the publication of our article, we received a communication from Graham Little together with a reprint in which he changed his point of view. According to his latest conception, he believes that these are unusual cases of lichen planus. There was nothing about either the clinical picture or the microscopic appearance in our case that suggested this diagnosis.

DR. ISIDORE ROSEN: Has Dr. Gross examined some of the hairs of this boy? Patients with monilethrix (congenital) often have keratosis pilaris, especially on the neck, ears and trunk. I believe that this boy is suffering from monilethrix.

DR. PAUL GROSS: I did not examine the hair for monilethrix. As for lichen planus, the histologic picture shows no changes suggesting the condition. The only changes found were keratotic scutula embedded in some follicular openings and a slight inflammatory reaction in the upper portion of the cutis.

A CASE FOR DIAGNOSIS (HYPERKERATOSIS OF THE PALMS AND SOLES AND THE BACKS OF THE HANDS?). Presented by DR. PAUL GROSS.

This woman, aged 29, born in the United States, has an eruption which has been treated for the past three years as ringworm. She has received about fourteen roentgen exposures.

There is marked keratodermia of the palms with a mild underlying erythema. This condition extends to the dorsa of the hands and fingers, and shows a rather sharp line of demarcation in about the middle of the hands. On the dorsal surfaces of the hands and fingers the eruption manifests itself as redness and thickening of the skin with a shagreen-leather appearance produced by deepening of the criss-cross lines of the skin. Some of the finger-nails show thickening of the free margins with lifting up of the distal portions. The feet show a similar condition, and the toe-nails are considerably affected. There is maceration between the toes.

Examination of the nails and of the skin of the hands and feet for fungi gave negative results on two occasions.

The reports on the examinations of the blood and urine for arsenic have not been received.

DISCUSSION

DR. FRED WISE: Many of the members have not seen this combination of palmar and dorsal lesions. In the past four or five years several articles have been published by foreign authors in which acrodermatitis verruciformis with plantar and palmar keratosis has been described. This is a rare combination of two types of lesions on the palmar and dorsal aspects of the hands.

DR. MARION B. SULZBERGER: Does Dr. Wise think that the circumscribed hyperkeratoses on the dorsa of the hands resemble those found in the cases recently described by Jeffrey Michael.

DR. FRED WISE: No, I think these hyperkeratoses are quite different.

DR. CHARLES LERNER: I venture the diagnosis of acquired keratodermia palmaris et plantaris, due to arsenic. The patient gives a history of having lost a good deal of blood as a result of a placenta praevia. At that time, according to her statement, she received a good deal of medication for about six months, but she expresses uncertainty as to whether arsenic was administered. Her present condition started about six months after the birth of her child. I remember a similar case that occurred in a man four or five years ago, which proved to be due to arsenic.

DR. PAUL GROSS: I presented this patient for diagnosis, but of the two possibilities that I had in mind, I preferred the diagnosis of pityriasis rubra pilaris. Dr. Wise's discussion encourages this diagnosis. I have never seen a case of acrodermatitis verruciformis, but I do not think that this case conforms to the description of that disorder.

DERMATOSIS PAPULOSA NIGRA. Presented by DR. PAUL E. BECHET.

This colored woman, aged 42, states that six years ago she noticed a few pigmented spots on her face, and since that time they have increased enormously in number. There are now from thirty to fifty black, polygonal and round macules and papules measuring from 0.25 to 0.5 mm. in diameter in rather discrete distribution on the face. There are no subjective symptoms.

DISCUSSION

DR. WILLIAM ABRAMOWITZ: My experience with dermatosis papulosa nigra has been limited to two or three cases. One patient, a white girl, was presented before this society. I am sorry that I have to disagree with Dr. Bechet in his diagnosis. The patient seems to have ordinary pigmentation of the face and lip, and only one or two of the pigmented lesions are papular.

DR. PAUL E. BECHET: I still believe that the diagnosis is correct. There are a few papules suggesting verruca plana. The lesions are black; they occur in a full-blooded Negro woman whose skin is so dark as to preclude any lentiginous dermatosis. There are no subjective symptoms. Michael in an analysis of 2,230 Negroes found 264 with this condition. It was four times more frequent in females, and it did not occur in persons of mixed blood. These facts agree with the findings of Castellani, who was the first to report the dermatosis.

PERIPHLEBITIS NODULARIS NECROTICANS. Presented by DR. PAUL BECHET.

M. B., a man aged 40, states that his lesions have been present for four months. He presents a number of indolent, violaceous red, nodular lesions on the legs, some of which have necrosed and broken down to form shallow ulcers. Biopsy showed a rather well localized growth of new blood vessels in the middle portion of the corium. There was a marked zone of edema between the normal-appearing

epidermis and the portion infiltrated with blood vessels. There were numerous cells containing brown pigment. There appeared to be an increased number of blood vessels in several different areas.

Roentgen examination of the chest showed a normal heart and aorta. The right pulmonary field and the lower two thirds of the left field appeared clear. In the apex of the left lung there was an infiltrated shadow which was fairly sharp, and the appearance was typical of tuberculosis.

DISCUSSION

DR. MARION B. SULZBERGER: It would be best to drop such terms as "periphlebitis nodularis necroticans" and "dermatitis necrotica" in the designation of ulcerative processes on the lower legs such as that in Dr. Bechet's case. Philippson, who applied the latter term to two similar cases, later read Darier's description of papulonecrotic tuberculids. He then recognized the resemblance between Darier's tuberculids and the condition in his cases and fortunately had the opportunity to reexamine the patients. After a long and tedious investigation he was able to prove histologically and by animal inoculation that the condition in both of his cases was tuberculous, and he and Török then decided that it was useless to continue their designation, as cases of this type were papulonecrotic tuberculids. For this reason, it is now generally accepted that these terms, as well as "hydro-adenitis suppurativa," which Pollitzer was the first to use for a picture clinically somewhat similar, are merely old names used before the tuberculous etiology of this entity was recognized. In a case almost identical to this one, recently presented by Dr. Fred Wise before the New York Dermatological Society, the histologic picture proved to be typically tuberculous, and the tuberculin test was very strongly positive with old tuberculin in a dilution of 1:1,000,000.

In the vast majority of cases of this nature the lesions can be proved to be tuberculids provided one takes sufficient time and pains and has the opportunity to study a sufficient number of lesions histologically by the injection of tuberculin, and by guinea-pig inoculation. In spite of this, I believe that rare cases may exist which are due to other causes. Any hematogenously distributed living (microorganisms) or nonliving (drugs, toxins, etc.) agents when they come into contact with sensitized or susceptible blood vessels in the legs can set up inflammatory and destructive processes which result in lesions such as those in this case.

DR. SIGMUND POLLITZER: Dr. Sulzberger has already referred to Philippson's work. The cases that he described were identical, and histologic examination showed the same picture that I had found a year or two earlier and reported under the name of "hydro-adenitis suppurativa." Philippson and I corresponded later on the subject and agreed on the essential features. Five or six years later Darier established the group of the tuberculids. Both Philippson's term and mine have been eliminated by the increase in knowledge, and I see no reason for reviving them.

DR. PAUL E. BECHET: Several years ago I presented under the designation of periphlebitis necroticans a case of subcutaneous nodular infiltrations arranged in linear, beadlike formation on the lower parts of the legs. The nodules were fixed to the skin and subcutaneous tissue and were dusky red. As they underwent involution, the skin was drawn down, causing large dimpled scars, and the dusky red color gave way to a dark brownish pigmentation. The lesions did not break down, and at no time was ulceration present. Certainly the clinical picture in this case was entirely different from Bazin's disease. At the October meeting of the New York Dermatological Society, Dr. Wise presented a case with the same tentative diagnosis, which was the exact duplicate of the case I am presenting. In closing the discussion on his case he stated that there are two types of the disease, one that ulcerates as in this case and another in which the lesions do not break down as these have. It would be well to establish periphlebitis nodularis necroticans as a definite clinical entity, if at all possible; and if this cannot

be done, the term should be abandoned and the disease considered as an aberrant type of erythema induratum of Bazin.

DR. MARION B. SULZBERGER: The patient has tuberculosis of the skin regardless of whether one calls the condition lupus vulgaris, Bazin's disease or papulonecrotic tuberculids. I still consider it of extreme importance to distinguish as sharply as possible between the various forms of cutaneous tuberculosis. For example, the distinction between Bazin's disease and papulonecrotic tuberculids is imperative on statistical grounds alone. While papulonecrotic tuberculids not infrequently affect the male sex, Bazin's disease in a male is one of the greatest rarities. Further study of the reasons for the predilection of the bacillus for the deeper veins of young women may obviously lead to information of fundamental importance. The immunity to Bazin's disease is also distinctly different from that to papulonecrotic tuberculids. In my material I have found patients with the former condition to give a distinctly higher percentage of very strongly hypersensitive reactions to tuberculin than do patients with the latter disease. Such differences exist among all the different varieties of tuberculosis of the skin, and further advance in their study would be checked by the failure to continue accurate clinical and histologic diagnosis and differentiation of the various forms.

A CASE FOR DIAGNOSIS (TUBERCULOSIS OF THE SKIN?). Presented by DR. A. BENSON CANNON.

E. S., a woman aged 29, was born in Florida, where she lived for fourteen years; she then lived in Detroit for fourteen years. She first noticed a nodular swelling over the left side of the forehead three years ago. This was incised and healed very slowly after considerable drainage over a long period of time. Shortly following the healing of the first lesion there appeared an ulcerating lesion on the lower part of the right leg which has never healed but has progressed slowly until its present state. Numerous other lesions have appeared from time to time, located principally on the legs and thighs, but later on the trunk, upper extremities and face. Five Wassermann tests of the blood made by the Board of Health and the Northwestern Hospital of Detroit are said to have been negative. The patient says that she has not had a primary lesion of syphilis and that she has never received antisyphilitic treatment. She has had five pregnancies, with two miscarriages. She has one child 4 years of age. Wassermann and Kahn tests of the blood of the child were negative.

The greater part of the patient's body is covered with lesions which are located principally as follows: (1) The face, lips and eyelids present multiple, raised, papular, nodular lesions the size of a split pea; (2) on the back of the neck, near the hair line is a corymbiform lesion; (3) on the extremities are many round, annular and serpiginous lesions which are slightly raised and covered with a scale or crust. The lesions on the lower extremities have ulcerated and discharged a foul-smelling, purulent material. In addition, an occasional rupial type of lesion may be seen. There are areas of pigmentation and depigmentation associated with some lesions. Examination of the lymph glands revealed bilateral inguinal adenopathy and also enlargement of the right epitrochlear glands. The eyes show some pupillary changes, the left pupil being very sluggish in reaction to light. There is also evidence of old iritis. The reflexes are active, and no points of anesthesia have been found.

Repeated Wassermann and Kahn tests have been negative. Repeated dark-field examinations of lesions on the vulva and extremities failed to show spirochetes. Repeated bacterial smears from the nose and from various lesions on the body failed to show acid-fast organisms. Supravital studies of the white blood cells showed 6,000 per cubic millimeter, with 76 per cent polymorphonuclears, 8 per cent lymphocytes, 14 per cent monocytes, 1 per cent eosinophils and 1 per cent basophils.

Biopsy on a specimen taken from the left knee showed large amounts of melanin. In the lower layers the melanin was for the most part absent over the area of greatest change in the corium. A marked verrucous change was noted. Hyper-

keratosis was extreme; parakeratosis was marked. The epidermis contained depressions filled with keratin. The rete was atrophic. In the subcutaneous fat were diffuse infiltrations of numerous epithelioid cells arranged in small and large nodules. Numerous giant cells were noted, frequently in the center of the collections of epithelioid cells. Lymphocytes were diffusely distributed. Numerous plasma cells were seen in the region of the thickened blood vessels. Areas of granular necrosis were noted.

A section taken from the lip showed a somewhat thin epidermis. Numerous chromatophores were seen. The superficial corium was very vascular. Separated from the epidermis by a narrow free zone of collagen were large and small masses of confluent epithelioid cells. In the center of some of these masses were granular necrosis and giant cells. About the periphery were numerous lymphocytes and plasma cells. Numerous voluntary muscle fibers were noted, many of them undergoing degeneration.

The histologic picture was that of tuberculosis, the lesion from the lip being typical of sarcoid. Another section reported on by Dr. Machacek showed caseation.

DISCUSSION

DR. A. BENSON CANNON: Dr. Mercer has been interested in this patient, and for that reason I suggest that he be permitted to discuss the case.

DR. S. T. MERCER (by invitation): The patient came to the clinic about two weeks ago and aroused much interest because she gave a history of repeated negative Wassermann reactions two or three years previously in Detroit and gave a negative Wassermann reaction at this clinic. Dark-field examination of some of the lesions on the extremities and on the vulva have revealed no spirochetes. Nasal smears have been negative for acid-fast organisms. There are no areas of anesthesia. There is some involvement of the inguinal lymph glands and of the right epitrochlear glands. The Wassermann reaction of the patient's child was also negative. The blood showed 6,000 white cells and a very unusual differential count (76 per cent polymorphonuclears, 8 per cent lymphocytes, 14 per cent monocytes, 1 per cent eosinophils and 1 per cent basophils). This means less than 500 lymphocytes per cubic millimeter. The normal ratio of 3 lymphocytes to 1 monocyte is almost reversed. I should like to hear discussion of the lesions on the body by other members of the section.

DR. A. BENSON CANNON: The patient's condition is of interest because she has had a multiplicity of lesions of various types increasing in numbers over a period of three years following the removal of a nodule from her forehead. She has been treated in a number of clinics, and invariably the diagnosis on admission was syphilis. The negative Wassermann reaction made the physicians change this diagnosis. In viewing the lesions on the face alone, my associates and I were convinced that the shiny, hard, tense papules at the angles of the mouth, over the nose and around the eyelids were characteristic of lupus disseminatus miliaris. On the back of the neck there was a corymbiform lesion, while on the extremities were crusted, ulcerated areas the size of a dime, and on the vulva, red, granular papules, which caused us to consider syphilis as the more likely diagnosis. I think, however, that if one takes into consideration the duration of the condition, the repeatedly negative Wassermann reaction, the nature of the lesions on the face, the histologic picture and the lack of improvement after antisyphilitic treatment, one will have to conclude that the patient is in all likelihood suffering from a tuberculous condition of the skin.

DR. GROAT (by invitation): I saw this patient several weeks ago at the Vanderbilt Clinic. I thought she had frambesia. One does not see this disease frequently in northern India, but one encounters it in the southern part and in Ceylon.

DR. MARION B. SULZBERGER: The lesions on the body look fairly characteristic of sarcoid of Boeck, while those on the face look more like lupus miliaris faciei. On pressure, I saw minute apple jelly nodules in the lesion on the nose.

I should like to emphasize that I do not suggest this as an etiologic diagnosis. Many bacillary diseases can cause such a picture. Among these I should like to include, first tuberculosis, and then leprosy, syphilis and frambesia. It might be interesting to make quantitative tuberculin tests and also to take roentgenograms of the hands and feet and of the lungs, in order to ascertain whether sarcoid infiltrations can be demonstrated in these structures.

DR. FRED WISE: In New York such cases are seen much more frequently in colored persons, seldom in white patients. The members will recall cases in Negroes with lesions on the mucocutaneous borders in which the histologic picture proved to be tuberculous. This patient presents a series of different lesions, all of which are probably tuberculous. If biopsy specimens were taken from suitable areas, microscopic examination might prove the existence of papulonecrotic tuberculids, lichen scrofulosus, true sarcoid or lupus vulgaris. I think that the patient has a combination of various tuberculous changes in the skin.

PUSTULAR PSORIASIS. Presented by DR. DAVID BLOOM.

This woman, aged 62, born in the United States, came to the New York University Skin Clinic on Sept. 9, 1927, with an eruption on the palms and soles of five years' duration. The eruption started with a red, painful patch on the posterior part of the right heel and was succeeded by similar lesions on the plantar surface of the right big toe and little toe, followed by similar involvement of the right palm and the left heel and palm.

On examination, on each palm and heel there was an irregularly shaped, fairly sharply defined patch of erythema, with scaling and slight crusting and a few flat pustules in each patch. There were no other cutaneous lesions. According to the patient the pustules appeared and disappeared, but the plaques never disappeared. She complained of pain and itching of the heels. The scales and the pus were examined microscopically and culturally for fungi, and the results were negative. The cultured pus proved sterile. The lesions were extremely resistant to all kinds of external applications; antiparasitic and antipsoriatic ointments proved of no use. Unfiltered x-rays in fractional doses also proved of no value.

On May 21, 1929, a slightly raised, erythematous lesion the size of a quarter, covered with silvery scales, appeared on the left elbow. It looked clinically like psoriasis. It disappeared following treatment with antipsoriatic ointments.

Since the beginning of 1933, the patient has been under my observation at the Bellevue Hospital Skin Clinic. Bacteriologic examination of the pus was made, and no micro-organisms were found. Microscopic examination of the affected skin of the palms and soles showed psoriasis with large Munro abscesses.

DISCUSSION

DR. LOUIS CHARGIN: I do not think that the condition is pustular psoriasis, but I am unable to offer a diagnosis. Assuming that the underlying process is psoriasis, I regard the superadded disorder as eczematoid rather than as so-called pustular psoriasis, which has a different distribution and a different primary lesion.

DR. GEORGE B. ANDREWS: This case clinically resembles very much the series of cases that I presented at the meeting of the American Medical Association in 1933. It also resembles those described by Barber and others as instances of pustular psoriasis. Histologically there is more acanthosis and the abscess in the epidermis is higher and smaller than in our cases. The parakeratosis is very slight and limited to the region of the pustule. The suprapapillary plates are not thinned. In other words, although in certain features the histologic picture may suggest psoriasis it is not sufficiently characteristic to warrant this diagnosis without corroboration from the clinical findings. I do not see any other features that suggest psoriasis, although I realize that clinically it conforms closely to the cases described by Barber as pustular psoriasis. The histologic picture is not typical, the clinical appearance is not like that of psoriasis and the condition does not respond to treatment for psoriasis.

DR. G. A. MACHACEK: I cannot say definitely whether either the case presented by Dr. Bloom or the cases mentioned by Dr. Andrews are examples of psoriasis. Studied comparatively from a histologic standpoint they show marked differences. In the cases referred to by Dr. Andrews serial sections were examined. Large pustules were found in the epidermis, the floor of which consisted of a narrow zone of epithelial cells which separated the cavity from the corium. Sweat gland ducts were seen running up to the pustules but a communication with the pustule cavities could never be demonstrated. There was only a slight inflammatory reaction in the corium in the immediate vicinity of the epidermal pustules. In the case presented here the pustules are superficial and much smaller, and the picture is different from that in the cases with which it is being contrasted.

DR. MAX B. SULZBERGER: I agree with the diagnosis as presented for the following reasons: In many cases which I have observed in which the lesions presented sharply defined and sometimes linear borders, with erythema and scaling, and in which occasional showers of sterile pustules occurred, often localized on the palms, one could find typical psoriasis elsewhere (on the nails, eyebrows, etc.) if observation was continued for a sufficient length of time. For this reason I do not believe the localization on the palms to be atypical for pustular psoriasis. Observations over many years are sometimes necessary before a typical psoriatic lesion appears, and in some cases one never has the opportunity to see such lesions and the diagnosis remains more or less doubtful. However, the histologic picture in this case corresponds to that of pustular psoriasis as seen in hyperkeratotic areas. I believe that the explanation of the pustule is probably that the so-called Munro abscesses become visible pustules because of the resistance of the thick horny layer of the affected areas, which prevents the rapid formation of scales and desquamation which usually occur. In this way the small epidermal cavities which are usually visible only microscopically (because they are desquamated before they grow to clinically visible dimensions) in the hyperkeratotic areas are not scaled off with sufficient rapidity; this enables them to grow to a clinically manifest lesion before they are thrown off with the scales.

From the descriptions and pictures which I saw at the time Dr. Andrews presented his paper in Milwaukee, I believe that the condition in most of his cases was not identical with that in Dr. Bloom's case. Most of his cases were probably pustular forms of "ids," under which term I should like to include "epidermophytids," "moniliids," "staphyloids" and possibly "ids" due to other organisms —in other words, the conditions which Bruno Bloch grouped under the term of "microbids."

DR. ISIDORE ROSEN: If the condition is not psoriasis, what is it? If there were no pustules almost every one would agree with that diagnosis. The persistence of the eruption, the resistance to treatment, the erythematous base and the micaceous scaling, together with the repeatedly negative results of microscopic examinations and cultures, all point toward that diagnosis.

DR. T. J. RIORDAN: I am responsible for the histologic examination. Dr. Andrews said that the papillae are not elevated. On the contrary, the suprapapillary rete is decreased in many places. Fusion of the pegs is marked. The granular layer is distinctly decreased or absent. So-called Munro abscesses are present in the uppermost part of the epidermis, mostly between the granular layer and the horny layer. This is where they should be found. They are not present in the malpighian layer of the epidermis. All the sections show a picture typical of psoriasis.

DR. HERMANN GOLDENBERG: I think the condition is typical psoriasis.

DR. WALTER J. HIGHMAN: All of the features mentioned by the dermatologic pathologists who have spoken may be present in psoriasis.

DR. PAUL GROSS: I have observed cases of this type for several years, and I am under the impression that they are becoming more and more frequent. I have also seen one of the typical cases of general pustular psoriasis which was recorded in the literature. In that case the lesions started as small pustules which

would dry up and form dry scaling papules and by spreading form typical psoriatic patches. The difficulty encountered in the case under discussion I can illustrate only by mentioning two other cases. In one, that of a physician, the condition was present on the palms and soles for a long time and later lesions developed on the legs and trunk which could not be distinguished from typical psoriasis. In the other case also the condition persisted for a long time and sometimes showed a prompt therapeutic response to mild ointments. Originally the condition consisted of discrete vesicular, pustular lesions, and later diffuse redness and scaliness developed. I have found that the only local remedy that gives a lasting result is colloidal oil of cade ointment. Notwithstanding all these facts, I suggest that these cases be given the name chosen by Dr. Andrews. With continued study of the condition a more satisfactory conclusion may be reached.

DR. HERMANN FEIT: One should not make a diagnosis of psoriasis unless it can be histologically proved. Psoriasis of the soles and palms used to be rare. If one does not find fungi, one cannot call a condition mycotic. The only thing to do is to study such cases further without classifying them. In two cases that I presented before this section, typical psoriasis was not present on other parts of the body nor could fungi or bacteria be demonstrated.

DR. GEORGE B. ANDREWS: Dr. Sulzberger interested me by saying that if one watches such cases long enough typical lesions of psoriasis will develop. I have about eighteen patients with similar conditions under observation. I have watched most of them for four years and have seen them frequently. No patient has shown typical lesions of psoriasis. In one case there were scaly, erythematous patches on the scalp and on one arm which lasted two weeks and disappeared. These were not characteristic of psoriasis. In four cases there were slight irregularities in the toe-nails but no characteristic lesions of psoriasis. I have never seen a patient with this pustular condition of the palms and soles who had either lesions of psoriasis or a history of psoriasis.

DR. BOLESLAW LAPOWSKI: I had four patients with pustular psoriasis without any definite psoriatic lesions. It took me several years to cure them. The lesions would clear up and then reappear under various external applications. In the case of a youth 17 or 18 years old with total alopecia, who had pustules and psoriatic lesions for seven or eight years on the elbows, genital region, buttocks, soles and palms, external applications gave no result, but after an injection of mild mercurous chloride was administered the lesions disappeared like magic, only an outline of the sites remaining. However, two weeks later all the lesions reappeared.

DR. A. BENSON CANNON: One of the previous speakers observed a patient with stippling of the nails and hyperkeratosis between the nails for eleven years. The patient came to me with generalized psoriasis. All dermatologists see cases of psoriasis that is limited to the scalp or to the nails or present only as a localized area or areas of neurodermatitis for from fifteen to twenty years before becoming generalized. I do not believe that six years is a sufficiently long period of observation of localized lesions to exclude the diagnosis of psoriasis. Dr. Fordyce had a patient with typical patches of neurodermatitis on the thighs and calves, itching being the most exaggerated symptom. As the lichenified patches began to disappear under roentgen therapy generalized psoriasis developed. Later pea-sized psoriatic lesions appeared in the pigmented areas where the patches of neurodermatitis had been. I think that the patient under discussion presents a typical picture of psoriasis.

DR. EUGENE BERNSTEIN (by invitation): Sometimes psoriasis is treated and cured, and sometimes it becomes neurodermatitis. It is not uncommon for a *circulus vitiosus* of three separate conditions to occur.

DR. GEORGE B. ANDREWS: I do not deny the existence of pustular psoriasis as described by Barber. I merely am not convinced that this is the diagnosis in my series of cases or in Dr. Bloom's case.

DR. DAVID BLOOM: I have observed the patient for about seven years and have come to the conclusion that the eruption is pustular psoriasis for the following

reasons: 1. The mycologic and bacteriologic findings are negative and the lesions have resisted all treatment. Although the pustules used to disappear and reappear, the erythematous plaques themselves have never disappeared. 2. There is a psoriasis-like patch on the elbow. 3. There has never been clinical formation of vesicles, and the histopathologic picture excludes eczema or a superimposed dermatitis. 4. The symmetry of the lesions, the repeatedly negative bacteriologic findings and the appearance of the pustules only on the preexisting plaques speak against acrodermatitis continua of Hallopeau, although the involvement of the nail bed of the right large toe, the nail of which has fallen off, and the presence of flat pustules on the nail bed are in favor of the diagnosis of acrodermatitis continua.

This eruption coincides with pustular psoriasis of the palms and soles as described by Barber (*Brit. J. Dermat.* **42**:500 [Nov.] 1930).

A Case for Diagnosis (Lymphoblastoma?). Presented by Dr. Eugene F. Traub.

This man, aged 50, a Hungarian laborer, was first seen at the Stuyvesant Square Hospital in 1925, at which time the present condition was of two years' duration.

As accurately as the history could be obtained, the trouble first manifested itself about 1922, with a small mass on the anterior surface of the left foot above the ankle. When putting on a rough working shoe, the patient noticed some pain at this site, and a red lump as large as a bean appeared. The next lump was noticed on the right foot on the inner aspect of the ankle, and this mass reached the size of a small lemon, continuing to grow for a year. Other growths then developed over the right toes, right knee, inner aspect of the left thigh and right forearm near the elbow. In 1925, all the lesions were treated with roentgen radiation, and some disappeared within two or three weeks. On the sites of some of the lesions areas of wrinkled atrophic skin appeared, which are still present.

The most interesting feature of the case then, as at the present time, was the presence of soft, large masses, some reaching the size of a large orange, scattered at random over the trunk and extremities. Over the dorsa of the hands, particularly over the joints of the fingers, and on the tips of the elbows, there were smaller masses about the size of a cherry, which were very hard, almost of cartilaginous consistency. These growths seemed to be different clinically, but on section no marked difference in the general character of the growths was observed.

The general medical examination gave essentially normal results, except for high blood pressure.

On April 12, 1928, examination of the right knee showed no evidence of any lesion in the joint. In the soft tissue above the joint there was a swelling, which was not sharply outlined, the fat spaces being obliterated. The findings suggested a possible invasion of the soft tissue similar to the growths scattered about the body.

On April 8, 1931, roentgen examination of the chest showed no evidence of metastatic malignant growth.

A note made on June 6, 1932, gave the following additional history: The patient stated that he had had a mass the size of a small egg on the left side of the neck since the age of 6 years. This was not completely gone, and there were other masses near it. He had recently cut himself on the right side of the neck while shaving, and the wound failed to heal and presented an elevated, slightly warty nodule.

On April 4, 1933, examination of the bones of the left arm failed to show any marked evidence of pathologic changes. The bones of the right hand also appeared normal. Slight periosteal thickening was seen on the palmar surfaces of the first and second phalanges of the third, fourth and fifth fingers. No pathologic significance was attached to this finding at the time, however. On Oct. 9, 1933, roentgen examination of the chest failed to show anything of pathologic significance. The patient has received roentgen treatment of sixty-seven areas during forty visits.

On July 24, 1925, the blood count showed 13,200 white cells, 74 per cent polymorphonuclears, 17 per cent small lymphocytes, 3 per cent large mononuclears, 2 per cent transitionals, 2 per cent eosinophils and 2 per cent basophils. On Aug. 25, 1926, there were 9,600 white cells, 80 per cent polymorphonuclears and 20 per cent lymphocytes. On May 1, 1928, there were 9,600 white cells, 80 per cent polymorphonuclears, 15 per cent lymphocytes, 5 per cent eosinophils and 2 per cent basophils. One hundred cells were counted. The count was taken at 1 p. m., the patient having had no food since breakfast. On Oct. 17, 1928, there were 7,600 white cells, 80 per cent polymorphonuclears, 7 per cent lymphocytes, 8 per cent mononuclears and transitionals, 4 per cent eosinophils and 1 per cent basophils. One hundred cells were counted. The red blood cells, numbering 4,730,000, appeared normal. The hemoglobin was 80 per cent. On Jan. 24, 1929, there were 6,600 white cells, 80 per cent polymorphonuclears, 13 per cent lymphocytes, 5 per cent mononuclears and transitionals and 2 per cent eosinophils. One hundred cells were counted. The red cell count was 4,450,000. The hemoglobin was 103 per cent. On April 8, 1931, there were 5,400 white cells, 85 per cent polymorphonuclears, 10 per cent lymphocytes, 2 per cent mononuclears and transitionals and 3 per cent eosinophils. One hundred cells were counted. The red cell count was 4,100,000, and the cells appeared normal. The hemoglobin was 77 per cent.

Three biopsies were made: On April 12, 1928, a section was taken from an oval area of skin 4 cm. long. The underlying tissue showed a pale, firm growth which was homogeneous in character. Microscopic examination showed the derma to be replaced by a diffuse growth of round cells of lymphocytic type. The process extended into the subcutaneous tissue. The cells were nearly uniform in size, and at one point there was a suggestion of a lymph nodule. The derma and the subcutaneous tissue showed a diffuse growth of lymphocytes, which had obliterated the normal structure of the skin, leaving a few scattered glands and blood vessels and strands of collagen. There were a few larger, clear cells of the Dorothy Reed type. The epidermis showed little change. The pathologic diagnosis was lymphoid leukemia (?) of the skin.

On April 19, 1928, microscopic examination of another specimen showed groups of mononuclear cells scattered through the derma. There was not the massing of cells seen in the other large lesion. There were groups of pigmented cells and near them mast cells. This appeared to be an older, fibrosed lesion. The pathologic diagnosis was lymphoblastoma.

On June 25, 1930, an oval area of skin 6 cm. long was removed. The underlying tissue showed a pale homogeneous growth to a depth of 1 cm. Microscopic examination showed infiltration of lymphocytes. The pathologic diagnosis was leukemia.

DISCUSSION

DR. EUGENE F. TRAUB: In the differential diagnosis my associates and I considered mycosis fungoides, leukemia cutis, xanthoma and acrodermatitis chronica atrophicans with nodular lesions. A number of pieces of tissue were removed for microscopic study, both from the hard nodular lesions on the dorsa of the hands and elbows and from the soft, fleshy masses on the extremities and trunk. Histologically the soft tumors and the hard nodular lesions showed little difference in structure except that the latter seemed to be older and more fibrotic. All other laboratory examinations, including blood tests, urinalyses and roentgen examination, gave negative results, and the only outstanding feature revealed in the medical examination was high blood pressure.

DR. EUGENE BERNSTEIN (by invitation): I think that the condition is acrodermatitis atrophicans of Herxheimer. It is hard to differentiate scleroderma, acrocyanosis, sclerodactylia and acrodermatitis. Part of the eruption makes me think of von Recklinghausen's disease, and that on the elbow, of fibromyositis as described by Gottron. Perhaps it is a combination of acrodermatitis atrophicans and von Recklinghausen's disease.

DR. SAMUEL PECK: Histologically it is often difficult to differentiate between a leukemic infiltration of the skin and lymphosarcoma, especially when with the former there is an aleukemic blood picture. Special stains which bring out the stroma show that it is richer in lymphosarcoma. An important differential point is the prompt response of lymphosarcoma to roentgen therapy.

DR. EUGENE BERNSTEIN (by invitation): I think that the first pathologic change is secretory with hypertrophy.

DR. WALTER J. HIGHMAN: When confronted with a unique picture such as this one must try to bring the discordant elements that are perceived into some sort of harmony. In this case there are tumors of the type Dr. Peck mentioned, vascular disturbances of the skin, a pigmentary disorder and atrophy. The condition is not poikiloderma atrophicans of Jacoby, yet it presents sarcomatous elements highly suggestive of something similar. I think it is lymphosarcoma, with the kind of changes in other tissues, notably the skin, that have been seen in conceivably related conditions. With that idea in mind, I think that the case should be studied further in order to reach a more definite conclusion.

DR. SIGMUND POLLITZER: I do not think that there can be any question of the diagnosis of acrodermatitis of the extremities. I think the man has two distinct, unrelated conditions. The tumors have nothing to do with the acrodermatitis. The tumors have peculiarities of lymphoblastoma. They appear suddenly and disappear with marvelous rapidity after a single roentgen treatment. My diagnosis is acrodermatitis atrophicans and lymphoblastoma, the precise nature of which I should not like to express an opinion about without further examination. The patient may have mycosis fungoides. The fact that there never has been itching or the usual prodromes of mycosis fungoides is against that diagnosis and leaves sarcoma as more probable.

DR. MARION B. SULZBERGER: The atrophic and cyanotic skin of the hands and wrists, the involvement of the skin over the ulna and the juxta-articular nodules combine to form a picture highly suggestive of acrodermatitis chronica atrophicans. However, one is forced to make more than one clinical dermatologic diagnosis. The lesions on the feet if found alone would certainly suggest Kaposi's sarcoma. The patient also has small macular atrophic lesions on the back and small fibromas as well as patches of atrophy caused by roentgen radiation and telangiectasia on the abdomen and elsewhere. In addition, there is the histologic diagnosis of some form of lymphosarcoma, which it would certainly be erroneous to disregard.

Since acrodermatitis may be considered a vasotrophoneurosis, if one feels inclined to force all of these pictures into one entity, one may conjecture that the patient has a relatively benign form of lymphosarcoma or Kaposi's sarcoma which has metastasized to parts of the central nervous system and thus affected the vasomotor nerves leading to the extremities. A nevoid process, such as von Recklinghausen's disease, might also cause all of the pictures encountered.

The case is extremely interesting and merits further study. I should be particularly interested in the neurologic findings, and roentgen examination might throw some light regarding the presence of syringomyelia-like changes.

DR. A. BENSON CANNON: Judging from the opinions expressed by the previous speakers, it is clear to most of the members that a definite clinical diagnosis is impossible without a more careful physical and laboratory examination. The patient presents lesions so similar to those of a patient whom I saw in Mississippi with Dr. Toulmin Gains, who finally proved to be suffering from xanthoma, that I think it would be of interest to relate some of the symptoms in that case. The man had many tumors over the surface of the skin, mainly on the elbows, knees and fingers and along the spine; the masses varied in size from that of a small pea to that of a hen's egg. Many of the tumors had the typical yellow color of xanthoma, while some were the color of the skin and others were dark red. Some were subcutaneous. He also had ankylosis of the spine and typical Charcot's knee joints. The patient was seen by a great many dermatologists without a definite diagnosis being made. Sections of these tumors were studied by many dermatologists

as well as general pathologists, their diagnoses usually varying among lymphoblastoma, neuroglia tissue, leprosy, sarcoid or tuberculosis, and xanthoma. I think that the patient presented tonight should also have Niemann-Pick disease excluded, especially if he has an enlarged liver and spleen. I am convinced that a very careful medical and laboratory study of this patient is imperative before a dermatologic diagnosis can be made.

DR. FRED WISE: I do not think that the areas of atrophy and anetodermia could be called characteristic or typical of acrodermatitis atrophicans, for in that disease there is a peculiar "shining through" of the blue veins which is absent in this case. The atrophy of the skin of the hands resembles that seen in leprosy.

DR. WALTER J. HIGHMAN: The patient has lymphosarcoma with various manifestations of cutaneous vascular disease and with atrophy and pigmentary disturbances. If these things can be brought into harmony, one will have something new in dermatology to reflect on. It is idle to be discursive.

DR. EUGENE F. TRAUB: This patient has been under observation for eight years. He has been carefully gone over by both the medical and the surgical department on a number of occasions. A number of the diagnoses mentioned in the discussion, I believe, can now be definitely ruled out. Xanthoma seems to be one of these. The normal blood chemistry together with the histologic picture in all the sections speaks against this diagnosis. Acrodermatitis chronica atrophicans is not so easily ruled out. Dr. Wise stated that the atrophy seen on the dorsa of the hands is not of the type ordinarily encountered in that condition. The appearance tonight is perhaps a bit more suggestive of this disease because some massive doses of filtered roentgen radiation have recently been applied to this area. The color changes and pigmentation in the extremities are subject to a great deal of variation, as apparently the patient's circulation has much to do with these manifestations. The surprising thing to me is the fact that the hard nodular lesions on the hands and elbows responded to roentgen therapy. Naturally after our first experience we expected all the soft tumors to be radiosensitive. Some of the atrophic areas on the body may conceivably be part of von Recklinghausen's disease, but I believe that the majority of the larger ones at least represent sites of old tumors that disappeared after irradiation.

CHRONIC BLEPHARITIS OF MANY YEARS' DURATION IN A CASE OF SYCOSIS VULGARIS SUCCESSFULLY TREATED BY AZOCHLORAMIDE (*N-N*-DICHLORO-AZODICARBONAMIDINE) IN POPPY-SEED OIL.

This patient was presented before the section on Oct. 3, 1933. At that time he was practically free from an eruption on the face which had been present for three years. The blepharitis could not then be treated because of the marked irritation produced by chlorhydroxyquinoline and benzoyl peroxide ointment used for the sycosis vulgaris. The condition proved resistant to all therapy advised by ophthalmologists and dermatologists. He is presented again with the chronic blepharitis practically cleared through the use of azochloramide (*N-N*-dichloro-azodicarbonamidine) 1:700 in poppy-seed oil.

ACANTHOSIS NIGRICANS (JUVENILE BENIGN FORM). Presented by DR. LOWENFISH.

J. B., a boy aged 15½, born in the United States, has had an eruption all his life. He states that it is growing more extensive.

Over the right side of the abdomen, running up to the costal border, is a verrucous brownish-black infiltrated eruption. In the axillary, cervical, genitocrural and elbow regions there is a blackish discoloration accompanied by exaggeration of the natural furrows of the skin. The patient states that he has noticed this for about two years. There are also soft, discrete, papillomatous lesions the size of a split pea, especially in the axillary areas and over the upper part of the back. The skin in these areas, as well as that on the palms and soles, is thickened. The lips especially

the upper one, are thickened with furrowing. The backs of the heels are infiltrated and scaly. Changes are beginning to appear on the finger-nails, which break easily. The upper part of the chest, upper and lower extremities and especially the face show many freckles and pigmented nevi varying in size from that of a pinhead to that of a pea; acne vulgaris is also present on the face. There are thickening and furrowing over the upper eyelids.

The Wassermann reaction was negative.

Biopsy showed sharp papillary projections. The depressions between these projections were filled by keratin, which was lamellated. This often formed intra-epithelial cysts. Acanthosis was marked. In some places fairly long rete cones were seen projecting into the corium. Portions of the epithelium had undergone a reticulated proliferation. The epidermis was edematous. The basal cell layer contained variable amounts of melanin. The corium was the site of a chronic inflammatory reaction. In view of the clinical appearance, the generalized distribution (abdomen and axillae) and the smudgy color, a diagnosis of acanthosis nigricans is tenable. The histologic picture is suggestive of acanthosis nigricans of the juvenile form.

The family history reveals that the patient's mother died at the age of 35 of carcinoma of the rectum with metastases to the perirectal lymph glands and the vagina. She had no cutaneous manifestations.

EXTENSIVE LUPUS ERYTHEMATOSUS. Presented by DR. PAUL E. BECHET.

This patient was presented before the New York Dermatological Society on Feb. 15, 1927 (ARCH. DERMAT. & SYPH. **16**:358 [Sept.] 1927) because of the splendid results following treatment with gold and sodium thiosulphate. He is shown again six years later because of the almost continuous administration of this drug for seven years with no apparent ill effects. He has apparently been rid of the lupus erythematosus for years, yet occasionally he has new outbreaks, especially when exposed to much actinic radiation. For these reasons, he has been given treatment with gold and sodium thiosulphate almost continuously, with intervals of rest of only a few months, for seven years. In that time he has received approximately 600 injections of gold and sodium thiosulphate mostly in doses of 100 mg., with no ill effects, his general condition being carefully checked every few months.

The last physical examination, two weeks ago, showed the face to be free from lupus erythematosus. The eruption had apparently been cured. The blood chemistry and the blood pressure were normal. The Wassermann, Kline and Kahn tests were negative. Roentgen examination of the chest gave negative results. Repeated tests of the urine were negative; there was never any evidence of renal irritation. The patient felt exceptionally well. The excessive treatment with gold and sodium thiosulphate seems, therefore, to have had no ill effects, and it has transformed an inveterate disfiguring disease into a smooth, white translucent cicatrix. He is now to be given a long period of rest from therapy.

URTICARIA PIGMENTOSA (SOLITARY LESION). Presented by DR. PAUL GROSS.

This patient was presented before the section on Oct. 3, 1933.

Histologic examination showed a typical mast cell tumor.

DISCUSSION

DR. G. A. MACHACEK: Microscopic examination showed a mast cell tumor. The cells were arranged in masses in the superficial portion of the corium, particularly just beneath the epidermis. In the deeper layer of the corium these cells were arranged in strands. Giemsa-stained specimens disclosed the cells to be filled with basophilic granules. The section under the microscope was stained with cresyl violet. It will be seen that all the cells contain fine reddish or violet granules.

CHICAGO DERMATOLOGICAL SOCIETY

MAX S. WIEN, M.D., *Secretary*

Regular Meeting, Nov. 15, 1933

OLIVER S. ORMSBY, M.D., *President, Presiding*

MULTIPLE EPITHELIAL NEVI. Presented by DR. M. H. EBERT and DR. MAX WOLF.

An American boy, aged 12, presents lesions which were first noted six months ago and which have increased more rapidly during the past two months. They cause no sensation, and there is no history of injury to a mole.

Examination reveals three hundred or more discrete, scattered papules, which are most numerous over the extensor surface of the arms, the buttocks and the upper part of the thighs. A few are noted under the chin and on the backs of the hands, and one or two on the ears. The trunk is free except for a few over the scapulae and in the axillary folds. The lesions vary in size from that of a millet seed to that of half of a French pea. They are raised, brownish red, smooth and moderately firm. Those on the buttocks are surrounded by a zone of pallor. Four types of lesions are seen: (1) flat-topped, lichenoid papules, of the size of a millet seed, slightly browner than the normal skin; (2) hemispheric to flattened, raised, reddish-brown papules varying in size from that of a pinhead to that of the head of a match, some with a faint scale (a yellowish discoloration persists under the diascope); (3) lesions of the same size as those of the second group but showing a definite blunt pedicle and a darker brown pigmentation; (4) larger lesions, of the size of a split French pea, darker and more flat-topped.

Biopsies were made on a lesion of the first and on one of the fourth type. The first type showed a lenticular mass of nevus cells which bulged the epidermis upward and in some areas thinned it to two or three rows of cells. In other areas long projections of the rete ran deep into the mass and were the source of nevus cells. Nevus cells were also derived by metaplasia from the hair follicles and from the ducts of the coil glands. There was little pigmentation and only an occasional pigment-bearing cell was present. Some perivascular infiltration by round cells was seen at the margin of the tumor.

The tumors which were of the size of a millet seed showed most of the changes in the acanthotic epidermis; nests of nevus cells were observed in the rete pegs and in the papillae and taking origin from the walls of the hair follicles and coil gland ducts. Little pigmentation was present, but there was considerable infiltration by round cells about the blood vessels adjacent to the lesion.

DISCUSSION

DR. S. W. BECKER: This case, with lesions appearing a considerable time after birth, is of a type that does not occur frequently. The term "nevus" means a "mark" and is not an ideal one. The term "nevus" or "nevoid" has been used to signify many prenatal conditions. The cells of which these tumors are composed are called nevus cells, and until the origin is better determined there is no better term for them. The only theories that have any support at present are, first, that the growths are of epithelial origin, which was suggested by Unna and which is accepted by the majority of present-day dermatologists, and, second, that these cells do not originate from the ordinary palisade cells but from cells first seen in the basal layer. These have been studied by Professor Masson, who called them "clear cells" because of their peculiar staining qualities. It is necessary to use a trichrome method which is a modification of Mallory's trichrome stain in order to distinguish the difference between these cells and basal cells. If this stain is used and the lesions are carefully studied it is impossible to demonstrate actual transition between palisade cells and nevus cells, such as was assumed in the past

by Unna and others. The origin of these cells is not known, but Masson suggested that possibly they originate in the sheath of Schwann. The study of a case like this, in which the process is active, will throw light on the condition, but the study cannot be made with ordinary staining methods.

DR. L. M. WIEDER: In addition to the nevoid condition this boy shows definite clinical signs of pituitary insufficiency. In view of the profusion of lesions there appears to be a remote possibility of an association between the epidermal and endocrine glandular pathologic changes, possibly through replacement of the posterior lobe of the pituitary gland by nevoid tissue of the type exhibited in the sections. It would be interesting to observe the patient over a period of time for evidence of further clinical changes supporting this conjecture.

DR. C. W. FINNERUD: These are the only sections I have seen in which there appears to be a definite continuity between the basal cell layer and the nevus formation above it as well as below it. On one of the slides in two or three places the nevus cells have formed what might be interpreted morphologically as an intraepidermal epithelioma. The same transition is seen in the section from the basal layer downward. This interesting picture strongly suggests an epidermal origin of the nevus cells but, as every one realizes, the origin of these cells is not understood.

DR. M. H. EBERT: The case is interesting from several points of view. Clinically, it is an unusual nevus, and histologically one would expect to find more pigment cells. I hope that with Dr. Becker's assistance we can obtain a dopa reaction. I agree with Dr. Becker that the case offers an excellent opportunity to study the so-called nevus cells. Another thing interested me particularly, namely, the possibility of malignant changes. In the very early lesion from which I secured a section there is a marked round cell reaction about the vessels around the lesion, and that is histologic evidence of the possibility of malignant changes. That is most important from the child's point of view. Dr. Jaffé looked at the section, and from what his associate said I understand that he considered the condition, histologically at least, as potentially malignant.

From the endocrinologic point of view an interesting speculation presents itself. Jadassohn taught that most nevi originate from epithelial anlagen which have not differentiated. I wonder whether in this boy, who is approaching puberty, some sex hormone may not have stimulated the development of such anlagen. It is known that the sex hormone has a highly stimulating action on the hair follicles and sebaceous glands, and in this case the nevus cells are seen apparently taking origin from the hair follicles and also from the ducts of the coil glands. The prognosis is what perplexes me, and I am eager to watch the outcome of the case.

ERYTHRODERMA (MALIGNANT); ALEUKEMIC LEUKEMIA. Presented by DR. C. W. FINNERUD and DR. E. V. PLUMMER.

This woman, aged 43, first noted two palm-sized areas of redness in the lumbar region two years ago. These areas spread around the trunk and gradually involved the four extremities and the face. She first noted enlargement of the inguinal and cervical glands about six months ago. Intense pruritus has been present since the beginning. There have been no other symptoms.

The entire body, including the face and extremities, is involved in a dry, finely scaling, erythematous eruption. There is no oozing and the reddened skin is only moderately thickened. There is a small cutaneous nodule in the right scapular region. All the palpable lymph glands are enlarged; those in the groins are discrete and of the size of large almonds; in the axillae two glands are each at least 4 cm. in diameter, the size of a small tangerine. The spleen is not palpable.

Examination of the blood revealed 3,940,000 erythrocytes and 12,920 leukocytes per cubic millimeter. The differential count was: neutrophils, 66 per cent; large mononuclears, 7 per cent; large lymphocytes, 12 per cent; small lymphocytes, 15 per cent. No eosinophils or basophils were seen. Two specimens were taken for biopsy and will be reported on later.

LYMPHOBLASTOMA. Presented by DR. MAX S. WIEN and DR. MINNIE O. PERLSTEIN.

This man, white, aged 66, gives the following essential history: For the past year he has had an intractable generalized pruritus which is getting progressively worse. About seven weeks ago a generalized erythematous eruption appeared and has persisted to date. About the time that the eruption appeared he noticed the occurrence of localized plaques on the extremities and one lesion of the right cheek. The lesions are devoid of subjective symptoms but have been slowly enlarging. There has been a generalized adenopathy for about two years. His general health has been unaffected by the cutaneous lesions.

The essential findings are the diffuse redness and fine branny desquamation of the skin of the face, neck and trunk. Diffusely scattered over the forearms, thighs and legs are reddish-brown, discrete scaling papules of the size of split-peas. Over the upper part of the left arm at the axilla is a sharply defined palm-sized erythematous, slightly infiltrated plaque covered with a psoriasiform scale. Similar lesions of smaller extent are scattered over the left thigh and right zygoma. There is a generalized adenopathy, the glands being hazelnut-sized, firm and freely movable. The spleen is not palpable. Examination of the blood revealed 6,500,500 erythrocytes and 31,400 leukocytes per cubic millimeter. The differential count showed: lymphocytes, 15 per cent and polymorphonuclear leukocytes, 50 per cent.

DR. R. H. JAFFÉ examined a specimen removed from the largest lesion on the left arm. The cutis was densely infiltrated by large cells which showed intimate relations to the ground substance. By desmolytic processes the cells became gradually separated, and fine fibrils appeared between and around them. The nuclei were oval and often slightly crenate and contained much chromatin with one or several small nucleoli. Mitotic figures were numerous, and the chromosomes were usually typically arranged. The cells invaded the epidermis and blended with the loosened and swollen epithelium of the rete malpighii, which showed reactive proliferation. In the deeper portions of the cutis, following the hair follicles and the blood vessels, there were infiltrations in which the larger cells were mixed with small round cells. The histologic picture was suggestive of the blastomatous stage or variety of mycosis fungoides.

DISCUSSION

DR. UDO J. WILE: I believe that cases such as this are illustrations of erythroderma with infiltration, which for want of a better name one calls lymphoblastoma.

Dr. Wien's case is of special interest because of the difference between the microscopic and the macroscopic appearance of the lesions. Grossly the infiltration does not seem very deep, whereas microscopically it is seen to extend through the cutis and into the subcutaneous fat.

Such an appearance is not uncommonly found with lymphosarcoma, and I am inclined to make this diagnosis in this case. I think that the diagnosis of aleukemic leukemia should be restricted to the blood dyscrasias rather than an attempt made to classify cutaneous lymphoblastoma under that designation. It is always well to remember that there is a tendency for lymphoblastomatous lesions occurring in the skin to evolve from one clinical form into another. It becomes necessary, therefore, to change the clinical diagnosis from time to time as the clinical picture changes.

DR. L. M. WIEDER: Lesions of the type under discussion, although sometimes permitting definite diagnosis when first seen, often present great diagnostic difficulty in spite of a strong premonition, based on the clinical features, that they will eventuate in a lymphoblastomatous entity. They often begin with diffuse, even universal, erythema, infiltration with variable degrees of edema, scaling, associated lymphadenitis and sometimes splenomegaly and hepatic enlargement, especially as late developments. Itching is nearly always a prominent symptom, although the patient may feel entirely well otherwise. In cases of this type examination of the blood may show little clinical and no appreciable leukocytic change for a period

of years and then show changes of the lymphatic leukemic type, sometimes finally exhibiting changes typical of mycosis fungoides or of both.

As I mentioned at the meeting in October, a patient whom my associates and I presented before this society in February (ARCH. DERMAT. & SYPH. **28**:436, [Sept.] 1933) first showed characteristic changes in the blood, coincident with marked aggravation of the cutaneous lesions and of the pathologic condition of the lymphatic glands, after a period of observation extending over four years.

NOTE.—On December 1 this patient was seen again, after an absence of a month. On all the extremities he presented numerous tumors of various sizes clinically characteristic of mycosis fungoides.

DR. OLIVER S. ORMSBY: I wish to call attention to a condition in a patient whom I presented at a meeting of this society two years ago, who at that time had general erythroderma and adenopathy with no changes in the blood. Eighteen months later, when I presented him again, he had increased redness of the skin and a definite leukemic change in the blood following exposure to the sun and wind, which caused an acute illness. From the onset there was intense pruritus, which appears to be characteristic of this type of condition. I think that this is important. General erythroderma accompanied by extreme itching is suggestive of developing leukemia or mycosis fungoides.

DR. C. W. FINNERUD: I was interested in Dr. Wile's conclusion about the case which he considered to be one of probable lymphosarcoma. In spite of the fact that I have seen mycosis fungoides—with biopsies made on specimens taken from a plaque rather than from a tumor—with as extensive infiltration as was present here, extending down to and into the hypoderm, I think that in this case the polymorphous character is not so marked as one expects it to be in mycosis fungoides, although sometimes in that disease the polymorphous picture is not striking. Lymphosarcoma appears a probably correct diagnosis in this case. In some cases of mycosis fungoides the spleen and lymphatic glands as well as the bone marrow and other reticulo-endothelial structures are invaded. There are several such cases on record. The fact that these structures are invaded does not rule out mycosis fungoides.

DR. MAX S. WIEN: When we first saw our patient with the mixed types of cutaneous lesions and the infiltrated patch in the upper part of the left arm associated with generalized adenopathy we believed that the case belonged in the lymphoblastoma group but thought that it was probably a case of leukemia cutis. From the section taken from a patch on the upper part of the arm, Dr. Jaffé made a diagnosis of mycosis fungoides, stating that the predominating cells were reticulocytes. We shall excise a gland the next time the patient comes in.

DR. UDO J. WILE: A general pathologist will more readily diagnose lymphosarcoma from a lymphatic gland than from the skin. This patient has a gland under the chin, which would be easy to excise. I do not believe that one can diagnose granuloma fungoides from the microscopic picture. The diagnosis of granuloma fungoides is a clinical diagnosis; the condition may present a variegated microscopic appearance. May I refer to the discussion of this subject at the annual meeting of the society several years ago, in which Dr. Engman took an active part?

DR. C. W. FINNERUD: The histologic sections are characteristic of leukemia cutis. The dense lymphocytic infiltration becomes diffuse in the papillary and upper reticular part of the corium and perivascular elsewhere in the corium.

NOTE: Histologic examination of an enlarged gland excised from the neck revealed nonspecific hyperplasia. There was no evidence of lymphosarcoma or of Hodgkin's disease.

HYDROA AESTIVALE (ACQUIRED ADULT TYPE). Presented by DR. CLEVELAND J. WHITE.

A white woman, aged 29, a business executive, states that she has had an eruption on the face and exposed portions of the neck for eleven years. The

lesions are most pronounced after exposure to sunshine. Previous to the onset of this disorder her skin was normal except for extreme sensitivity to the sun's rays, sunburn appearing very rapidly. One brother has a marked tendency to become sunburned; her sister, brother and father have never had any cutaneous trouble. Her two children have been examined and found normal. There is no history of internal medication.

Examination reveals an apparently healthy young woman with many vesiculopustular lesions on the face and exposed portions of the neck, and with numerous vacciniform scars.

Serologic tests of the blood were negative; the blood cell count, the differential count and the basal metabolic rate were normal. The urine was positive for hematoporphyrin.

A trial exposure to the ultraviolet rays from the mercury vapor arc in quartz produced a marked exacerbation of the eruption in ten seconds—the usual time of exposure for producing erythema being four minutes at the same distance—and the lesions appeared in twenty-four hours.

DISCUSSION

DR. J. H. MITCHELL: In talking to this patient I obtained the history typical of neurotic excoriations. She admits that she digs at the lesions until she gets an imaginary something out, after which she is relieved. Was the amount of hematoporphyrin determined?

DR. M. H. EBERT: I asked her whether the lesions appeared on the backs of the hands and I understood her to say that they did not. If this condition is a sensitization to light, it is localized to the face. I wonder whether in testing with ultraviolet rays from the air-cooled quartz mercury vapor arc lamp Dr. White tested other regions than the face. Such a localization is unusual.

DR. F. E. SENEAR: I did not believe that there was sufficient evidence to make a diagnosis of hydroa aestivale. I also heard about the patient's tendency to tamper with the lesions until she got something out of them and that she then obtained relief. Because of the absence of involvement of the nose or ears, which one sees nearly always in hydroa aestivale, I should wish to study the case further before accepting the diagnosis. Some writers use the term "hydroa aestivale" when the lesions are superficial and do not produce scars, and "hydroa vacciniforme" when the lesions are deeper and produce scars. It seems to me that if the patient has a sensitivity to the ultraviolet rays from the air-cooled quartz mercury vapor arc lamp, from which a sunburn develops, that fact does not particularly support the diagnosis of hydroa aestivale or vacciniforme, because that is an entirely different type of reaction.

DR. CLEVELAND J. WHITE: Study of the clinical features of this case over four month's time, reproduction of the lesions with an extremely small dose of ultraviolet rays, and a positive test for hematoporphyrin in the urine on two occasions make the diagnosis of hydroa aestivale a strong possibility. Dr. Ormsby and Dr. Pusey use the terms "hydroa aestivale" and "hydroa vacciniforme" interchangeably. The neurotic excoriation is believed to be a sequel rather than the preliminary basis of the lesions. The patient has refused a biopsy because of the location of the lesions.

XANTHOMA TUBEROSUM MULTIPLEX. Presented by DR. F. E. SENEAR.

This boy, aged 10, had a yellowish lesion on the instep and one on the left heel, which developed at the age of 4 weeks. Gradually new and larger lesions appeared over the trunk and extremities, becoming particularly numerous and large over the elbows, knees and buttocks. It was also noted that the achilles tendons were becoming enlarged and thickened, and two years ago he was operated on, but it was found that the nodules were present in the tendons and could not be removed.

The boy shows a typical tuberose form of xanthoma with many papules and plaquelike infiltrations scattered over the trunk and extremities. He also exhibits marked thickening of both the achilles tendons and a similar infiltration in the tendon of the right triceps.

DISCUSSION

DR. UDO J. WILE: This case illustrates perfectly the implantations of the lesions in the tendon sheath. In several of the cases in which the tendon sheaths have been invaded there have also been endocardial and visceral lesions, and in some cases xanthomatous lesions in the liver and serosa. Such cases occasionally have a fatal outcome. I wonder whether this child has been examined for visceral lesions.

DR. E. A. OLIVER: Dr. Wile's mention of lesions of the endocardium makes me recommend again the recent book of Cockayne, "Inherited Abnormalities of the Skin." In his discussion of xanthoma he mentions several families with endocardial xanthomatosis.

DR. F. E. SENEAR: The boy has been with us only for a few days. He has been placed in the pediatric department for thorough examination, and it was reported that from the physical standpoint the first examination disclosed nothing suggesting any visceral involvement. A further report from the department will be given later.

A CASE FOR DIAGNOSIS: XANTHO-ENDOTHELIOMA (?). Presented by DR. OLIVER S. ORMSBY.

A man, aged 26, presents a single nodular lesion on the chin, of six months' duration. He states that the lesion began as a "pimple," which later was opened, but no discharge was obtained. It gradually enlarged to its present dimensions but produced no subjective symptoms.

The lesion is somewhat larger than a pea, hemispheric, firm and brownish red; a few telangiectatic vessels course over its surface.

DISCUSSION

DR. F. E. SENEAR: I think that the case is interesting, although I have no diagnosis to offer. I was struck by the yellowish tint which I thought was xanthic. Several years ago my associates and I presented a patient before this society whose condition was diagnosed nevoxantho-endothelioma; the case was first reported by McDonagh and later by Wise. In conjunction with Dr. Jaffé we demonstrated that we were not dealing with nevoxantho-endothelioma but with juvenile xanthoma and, on going over the literature, we thought that the cases all belonged in that group and could be looked on as reticulo-endotheliomas. Recently in the *Annals of Surgery* of 1932 I saw an article in which were described dermal lesions clinically resembling desmoid fibromas, which in his presidential address Dr. Michelson described as nodular subepidermal fibrosis. The article showed that we were dealing with lesions made up entirely of histiocytes, some of which had taken on sufficient fat to be regarded as xanthoma cells while others were still distinguishable as endothelial cells. It seems to me, in spite of the fact that the nevoxanthoma-endothelioma is made up of multiple lesions and this new type consists of single lesions, that possibly some of the cases of benign lesions of this type, while not histologically studied to determine the diagnosis, might well belong in some obscure classification.

DR. UDO J. WILE: I saw similar lesions on the nose of a patient some years ago that turned out to be an unusual form of sebaceous cyst adenocarcinoma. There was no suggestion of its cystic content. I also saw a similar lesion removed from the neck of a patient, and that turned out to be a mixed tumor.

DR. C. W. FINNERUD: About seven or eight years ago, in the dispensary at Rush Medical College, we saw a somewhat similar lesion on the right cheek of a

child about 1 year of age. The lesion was of six months' duration and was three or four times the size of this one. I classified it histologically as a nevoxantho-endothelioma, although the histology was exactly the same as in the case which, I believe, Artz reported as juvenile xanthoma. It contained numerous giant cells, much like Langhan's giant cells.

DR. L. M. WIEDER: I should like to suggest the possibility of this lesion's being a keloid. The patient told me that the lesion began as a painful pustule, which he squeezed, following which it slowly but progressively increased in size. The pigmentation is rather unusual for a keloid, but I believe that the waxy-appearing portions may be sebaceous cystic inclusions. It is not uncommon, moreover, to find telangiectatic vessels overlying keloids.

DR. OLIVER S. ORMSBY: This patient was shown on account of the clinical resemblance of the lesion to those seen in nevoxantho-endothelioma, a condition recently fully described by Dr. Senear. I have seen a similar lesion on the face of an infant. My early impression of the lesion in the present case was that of epithelioma or keloid. The correct placement of the condition will await a histologic study.

SCLERODERMA WITH CALCAREOUS NODULES. Presented by DR. RUBEN NOMLAND and DR. W. W. TOBIN.

This girl, aged 14, has had a dermal disorder of twelve years' duration. When she was 2 years of age her mother first noted diffuse redness and scaling of the head and neck, which have been present since that time. At 4 years small nodules began to appear about the joints, which the mother thought were due to injuries; these nodules have gradually increased in number and in size. The child is bright, responsive and apparently of normal intelligence. Until two weeks ago she was under observation at the Children's Memorial Hospital. Moderate pruritus and impaired movement of the joints are the only subjective symptoms.

Examination reveals a scaling, erythematous eruption, with moderate atrophy, of the skin of the head, neck and upper part of the chest. The distal phalanges of the fingers and the malleoli show atrophic areas with telangiectasia. Calcified nodules are to be noted about the joints of the hands, elbows, knees and feet, varying from 0.5 to 2.5 cm. in their greatest dimensions. The skin is thickened and somewhat bound down, with firmness of the muscles; general physical underdevelopment is apparent.

The Wassermann reaction is negative. The cell count is normal, and the urinalysis reveals no abnormality.

DISCUSSION

DR. M. H. EBERT: I was reminded of a patient with sclerodactylia presented some years ago in whom numerous deposits of calcium developed under the skin; some of these were excreted after a time. In addition there was complete absorption of the terminal phalanges of the digits. The patient was not seen for a number of years but returned about a month ago because the condition had recently become more active. At that time I removed a lesion about the size of the head of a match which was made up of calcium. Cases in which deposits of calcium in the skin are associated with sclerodactylia are rare but do occur.

DR. OLIVER S. ORMSBY: Some time ago I presented before this society a patient who had scleroderma beginning with lesions of the Raynaud type on the hands. There were associated calcareous nodules about the elbows and on the upper forearms (*J. Cutan. Dis.* **33**:392, 1915).

DR. FRED E. SCHMIDT: I wonder whether any one has had experience with pancreatin in conditions like this. Some years ago Joseph Sellei commenced giving whole pancreatic extract in cases of this type. Later he thought that it had some effect on the terminal vessels in the skin. Some years later Lewis confirmed this idea, particularly in Raynaud's disease, which is always associated with terminal changes. Sellei now says that only cases of scleroderma en plaque are benefited

by pancreatic ferment. I have had an opportunity to use this in two cases, and in both marked softening has taken place. He advises the giving of large doses, So I gave them as many tablets per day as they could afford.

DR. RUBEN NOMLAND: The French have paid more attention to this condition than any one else, going so far as to refer to it as the Thibierge-Weissenbach syndrome. In the January and February number of the *Annales* (Weissenbach, R. J., and Basch, G.: Les formes cliniques du syndrome Thibierge-Weissenbach, concrétions calcaires des sclérodermies, *Ann. de dermat. et syph.* **4**:1 [Jan.-Feb.] 1933) Weissenbach and Basch extensively reviewed the topic of calcification in scleroderma. They claim that the most common type is like that in the patient referred to by Dr. Ebert in which there are at first a Raynaud syndrome, later sclerodactylia and scleroderma and finally deposits of calcium chiefly in the fingers with extrusion of particles and even loss of parts of the terminal phalanges. This variety occurs commonly in middle-aged women. According to Weissenbach a few cases occur in children following relatively acute edematous types of scleroderma, which often have as a sequel an intense firmness of the muscles and subsequently a deposit of calcium in the fingers, knees, elbows and elsewhere on the trunk. This is the type which I think that this child has, in view of the acute onset at the age of 2 of a condition that might be interpreted as acute edematous scleroderma and of the present marked firmness of the muscles evidenced on palpation of the biceps.

PEMPHIGUS ERYTHEMATODES. Presented by DR. M. H. EBERT and DR. B. B. BEESON.

This man, white, aged 56, of Irish descent, when first seen presented a generalized eruption of five months' duration, which had never involved the mouth.

The patient was pale and poorly nourished. From time to time flaccid, symmetrical bullae had appeared in some areas over the normal skin and in other areas on an erythematous base. These bullae soon ruptured, and the erosion was covered with a yellowish greasy crust. On the face the lesions were well developed in the butterfly area and suggested the seborrheic type of lupus erythematosus, but on the scalp the scales were heavier and there were greasy crusts. The Nikolsky sign was positive.

The differential cell count showed nothing of importance.

A specimen taken from a lesion on the trunk showed that the roof of the bulla was very thin and that the floor was made up of edematous and acanthotic rete, through which numerous polymorphonuclear leukocytes were migrating. At one end of the bulla, keratin was being reformed, while at the other end the rete cells were separated and lying loose in the lumen. Small intra-epidermal vesicles were present in the adjacent epidermis. The blood and lymph vessels of the reticular and papillary layers were dilated and surrounded by an infiltrate of polymorphonuclear neutrophils and lymphocytes.

Since the examination one month ago the patient has received large doses of viosterol, with marked general improvement. On some occasions the Nikolsky sign has been negative, his face is nearly clear, and his general condition improved.

DISCUSSION

DR. M. H. EBERT: In this case the histologic appearance was studied in a specimen taken from one of the early bullae, and it showed the changes one usually associates with pemphigus. Now the eruption seems to have settled down to the sebaceous crusted type, but not all lesions of this type are benign. We had a man here in the hospital with this type of lesion, with no lesions in the mouth, in whom generalized pemphigus developed later and who died.

DR. OLIVER S. ORMSBY: I do not think that the word "benign" was ever incorporated in the title by those who reported these cases. The lesions are a little different from those seen in the usual type of pemphigus, but there is no

doubt that some of them represent pemphigus. To distinguish this type the name "pemphigus erythematodes," has been used, and I believe that this properly designates the condition and distinguishes it as a definite type of pemphigus.

A Case for Diagnosis: Dermatitis Factitia? Presented by Dr. Theodore Cornbleet and Dr. E. R. Pace.

A German, aged 50, states that his skin was normal until four weeks ago, when a violent pruritus developed at the site of the present lesion; scratching and rapid development of a spreading ulcer resulted.

The lesion is located over the right trochanter and the adjacent area and measures about 6 by 8 inches (about 15 by 20 cm.). The central area is occupied by a necrotic ulcer, deeper than the rest and covered by a green slough. This is surrounded by a continuous erosive area with a sharp hemorrhagic border covered by detached shreds of epithelium. The surface is moist and peppered with cayenne-like eyelets. The border is definitely scalloped and extended in an ill defined cyanotic zone. Beyond the border a continuous bulla appears to extend entirely around the lesion. The area is extremely tender and "burns like fire." A bronze-like thickening is present over the ischii. The tips of the right upper digits are covered with hemorrhagic bullae, each on a necrotic base. A patch of purpura is noted on the radial surface of the thumb. The nails are shedding, and there is an odor of gangrene. An irregular erosion on the right thigh is also noted.

The patient was seen for the first time the day before presentation and no laboratory data are available, except the urinalyses, two of which have been negative. A specimen has been removed for biopsy.

The deep reflexes are brisk; no abnormal reflexes can be elicited. The pupils react rather sluggishly to light. Proximally to the upper portion of the lesion the patient at times fails to distinguish between hot and cold, but otherwise the sense of pain, of touch and of temperature is apparently intact.

DISCUSSION

Dr. J. H. Mitchell: This may be a factitious dermatosis. Possibly the patient has dipped his fingers in phenol and applied it to this area. I have suggested to Dr. Cornbleet that the blackish crust be tested for phenol by distillation. The drug is readily detected in that way.

Dr. Theodore Cornbleet: I am glad to accept this suggestion.

Pigmented Basal Cell Epithelioma. Presented by Dr. Henry C. Schorr (by invitation).

A Greek, aged 54, states that nine years ago he first noted a small papule behind his left ear, which he irritated by scratching. The lesion soon began to spread in streaks parallel to the outline of the rim of the external ear. For the past three years the lesion has remained stationary. Dark red pigmentation is present. He has been treated for seborrheic dermatitis with various ointments and lotions.

Biopsy of one pigmented area showed that over the tumor the epidermis is thin and flattened. In the upper part of the corium are many circumscribed masses of densely packed basal cells, some of which contain much melanin. Just below the epidermis the vessels are widely dilated. The corium contains many histiocytes and chromatophores about the tumor masses.

DISCUSSION

Dr. S. W. Becker: This is a typical picture of pigmented basal cell carcinoma. There are the progression, the rolled border, not very pearly, owing to the underlying pigment, and the central scar. In connection with an article entitled "Melanotic Neoplasms of the Skin," which will be published in the *American Journal of*

Cancer, I studied several cases of carcinoma and found that melanin is present more often than has been thought, because it is difficult to see it in sections stained with hematoxylin and eosin unless it is present in large amounts. It is more frequent in basal cell carcinoma and is quite infrequent in the squamous cell tumors.

MYCOSIS FUNGOIDES. Presented by DR. S. W. BECKER and DR. M. E. OBERMAYER.

This man, aged 35, has been under treatment for latent syphilis for five years. After three years of treatment, at which time he was receiving one course of bismuth treatments yearly, generalized pruritus developed, which was most marked after he undressed at night. After one week of pruritus a generalized follicular keratotic eruption developed; this was diagnosed, "lichen spinulosis." The lesions were marked on the trunk and external surfaces of the arms and legs, and there were a few lesions on the face and neck. The patient stated that these lesions appeared after he had scratched the involved areas. Under treatment, the spines disappeared in about a month, but the pruritus continued. Six weeks later there developed about the face and scalp exudative plaques which were relieved only by roentgenotherapy. The eruption disappeared for about three months, but the pruritus persisted.

Nine months ago the spinous eruption recurred over the body, and the face and forearms presented some dry, slightly elevated, erythematous, scaling plaques. The blood at this time showed: hemoglobin, 90 per cent; an erythrocyte count of 4,770,000; a leukocyte count of 6,200; polymorphonuclears, 54 per cent; large lymphocytes, 9 per cent; small lymphocytes, 31 per cent; mononuclears, 5 per cent, and eosinophils, 1 per cent. Various local and general measures gave no relief, and the condition was relieved only by roentgenotherapy.

Two weeks ago the patient returned with many erythematous, oozing plaques on the face, from about 2 to 3 cm. in diameter, and with one smooth, dusky tumor in the right supra-orbital region. The blood at this time showed: hemoglobin, 78 per cent; an erythrocyte count of 4,410,000, and a leukocyte count of 7,300. The differential count was: polymorphonuclears, 60 per cent; large lymphocytes, 11 per cent; small lymphocytes, 20 per cent; mononuclears, 5 per cent; eosinophils, 2 per cent, and basophils, 2 per cent.

Histologic examination of the supra-orbital tumor showed an enormous polymorphous infiltration immediately beneath the epidermis.

DISCUSSION

DR. RUBEN NOMLAND: I should not have accepted this diagnosis without seeing the section, but after seeing the section I think that it is not compatible with anything except mycosis fungoides.

DR. WILLIAM ALLEN PUSEY: I should not have recognized the case as one of mycosis fungoides from the examination I made. I am ready to accept the diagnosis, but I think that the appearance is confused by a secondary dermatitis caused by scratching.

DR. S. W. BECKER: This case perplexed us a great deal, for the patient was receiving treatment for syphilis when an eruption of the type known as lichen spinulosus developed. We thought it might be a dermatitis from bismuth, for which we have been looking, but which as yet we have not seen in our clinic. The patient was treated with a sulphur salt, with no improvement in the lesions. We used all sorts of therapy, and, to relieve the intense pruritus, gave a long series of treatments with solution of sodium bromide, which we have used with considerable success in the treatment of senile pruritus but with no success at all in this case. The only form of treatment that gave relief was roentgenotherapy. The blood picture revealed nothing abnormal, and the diagnosis was uncertain until two or three weeks ago when a tumor developed above the right eyebrow and the biopsy established the diagnosis of mycosis fungoides.

SYPHILODERM (LATE EXTENSIVE) WITH ATROPHY AND JUXTA-ARTICULAR NODES. Presented by DR. RUBEN NOMLAND and DR. E. A. SKOLNIK.

A woman, aged 60, states that fifteen years ago she had a sore throat and a generalized eruption. The disorder was diagnosed as smallpox, and she was retained in a hospital for contagious diseases for nine weeks, until the rash subsided. She had no lesions preceding this attack.

The present condition was first noted about five years ago. It began as small, reddened lesions which appeared first on the arms, then on the legs and finally on the body. At about the same time small hard subcutaneous nodules were noted beneath the elbows. These nodules increased in size and number, and at the time of presentation extend from the elbows to the wrists on the extensor surfaces of both forearms. During the past six months the patient has noted similar but small nodules on the dorsal surface of the right hand. She has never had a Wassermann test or antisyphilitic therapy. There are no subjective symptoms.

Examination reveals an eruption on the trunk and extremities, consisting of large erythematous patches with infiltrated papulonodular lesions at the borders and scattered through the patches. Marked atrophy of the skin is noted in the patches and in the extremities, where it simulates acrodermatitis chronica atrophicans. At the elbows and extending to the wrists on the extensor surfaces of both forearms are numerous hard subcutaneous fibrous nodules, varying from the size of a pea to that of a walnut. Similar nodules are observed on the dorsal surface of the right hand at the second and third metatarsal-phalangeal joints. The physical examination was essentially negative.

Examination of the blood revealed 4,430,000 erythrocytes and 16,000 leukocytes per cubic millimeter; hemoglobin was 67 per cent. The differential count was: neutrophils, 51 per cent; small lymphocytes, 47 per cent; eosinophils, 2 per cent. The Wassermann reaction of the blood was 4 plus; that of the spinal fluid was negative. The urinalysis yielded negative results.

Biopsy showed that: 1. The juxta-articular node consisted of a fibrotic tissue with many elongated cells with nuclei of the connective tissue type and a moderate number of capillaries surrounded by round cells. Beyond the periphery of the nodule a medium-sized vessel was found, completely occluded by proliferation of the intima. No elastic tissue was found in the nodule. 2. A papulonodule removed from a patch on the back revealed a moderate perivascular infiltration of round cells and some diffuse infiltration in the upper cutis, with probably a slight atrophy of the epidermis. The elastica in this region was mostly destroyed.

DISCUSSION

DR. WILLIAM ALLEN PUSEY: Perhaps some senile atrophy accounts in part for the picture.

DR. OLIVER S. ORMSBY: I think that the lesions on the skin deserve a little more attention. One cannot say that they are late lesions of syphilis, for they are not of the type one usually classifies as late syphilis. These lesions belong in the group described by Unna under the term "neurosyphilid." In his group the lesions were macules having a circinate arrangement while in this case there is more infiltration in the lesions. It is not an ordinary late syphilid but one of the unusual late eruptions that belong in the aforementioned group. The juxta-articular nodes are interesting. The conclusion is that this patient presents two supposedly rare manifestations of syphilis.

ARGYRIA. Presented by DR. THEODORE CORNBLEET and DR. E. R. PACE.

A white man, aged 51, presents a universal, slate-colored discoloration of the skin and mucous membrane, which is more intense on the face than elsewhere. Darkening of the sclera is also evident. Traumatic scars on the nose and hands, some of which had been present for at least six years, are free from discoloration. The patient states that in 1916 he fell from a ladder while working as a painter

and carpenter and was so seriously injured that he was confined to bed for eighteen months. During that time he was given medicine for the relief of abdominal pains and diarrhea, which still persist. During February, 1918, while he was convalescing, his skin began to assume a steel gray hue and attained its present color in three days. There has been no marked loss of weight. In about 1913 he was given local treatment for gonorrhea.

DISCUSSION

DR. WILLIAM ALLEN PUSEY: Did any one ever see as extreme a case as this? This is the most extreme case of argyria that I recall.

DR. THEODORE CORNBLEET: His mucous membranes are also extremely pigmented.

LICHEN SCROFULOSORUM. Presented by DR. HARRY M. HEDGE.

A Negro boy, aged 9, has a cutaneous condition of five years' duration. The eruption consists of grouped, flat-topped papules distributed over the trunk, arms and legs. There is practically no pruritus. At the time of birth the child had a paralysis of the right arm believed to be of the upper brachial type. His arm was put in an aeroplane splint for fixation, with right angle abduction, flexion and dorsiflexion at the hand. In a few months normal use of the arm was obtained, and since that time the child has developed normally, with the exception that he persistently holds the head to the left with the chin slightly raised. There is a partial ankylosis of the mandible at the left angle of the jaw, causing a limitation of motion which hinders normal mastication. Examination of the lungs by a competent internist revealed no abnormalities. The remainder of the physical examination was negative, with exception of a considerable amount of wax in both ears and an abnormal brownish pigmentation in the lower edge of the left cornea.

The Wassermann, Kahn and Pirquet tests were frankly negative. The urinalysis gave negative results. The examination of the blood showed: erythrocyte count, 4,500,000; leukocyte count, 9,150; hemoglobin, 85 per cent. The differential count was: polymorphonuclears, 57 per cent; large lymphocytes, 4 per cent; small lymphocytes, 34 per cent; eosinophils, 5 per cent. Roentgenograms of the chest and left side of the jaw gave no additional information.

A biopsy was made on a specimen taken from a group of lesions on the back, which showed numerous small accumulations of lymphocytes, plasma cells and eosinophils in the corium just beneath the epidermis and extending deeply into the corium around the blood vessels. The deeper layers were slightly hyperplastic and heavily pigmented.

DISCUSSION

DR. E. A. OLIVER: When I first looked at this patient I thought that the lesions on the anterior aspect of the chest were lichen scrofulosorum, but on looking over the other portions of the body, dermatitis herpetiformis suggested itself to me. However, after examining the microscopic specimen I agree with the diagnosis of lichen scrofulosorum. I have never seen a case of such long duration.

DR. HARRY M. HEDGE: The first sections were made from the edge of the lesions, and they showed no signs of grouping. I had a second series of sections made, which I showed today, and they were taken from nearer the center of a lesion and show some grouping. I shall try to obtain other sections. In spite of the negative Pirquet test I believe that probably the condition is some sort of tuberculosis.

ATROPHY (MACULAR) IN CONGENITAL SYPHILIS. Presented by DR. RUBEN NOMLAND and DR. RALPH SCULL.

A Negro boy, aged 10, presents an eruption which was first noted seven years ago. The lesions progressively involved the buttocks and the lumbar and

inguinal regions. They are round or oval, soft and tumor-like, because of ballooning of the atrophic areas of the skin. The are lighter than the normal skin, noninflammatory, and measure from 0.5 cm. to 3 cm. in diameter.

The Wassermann and Kahn reactions were 4 plus. The mother and two children aged 9 and 10 showed strongly positive Wassermann reactions, but two younger children showed negative reactions. None of the children present clear-cut physical signs of congenital syphilis.

Biopsy revealed an apparent thinning of the epidermis, probably due to tension. There was an absence of elastic tissue fibers in the upper and deeper cutis, while in the midcutis there were clumping and fragmentation of the fibers. No inflammatory reaction was present, and the elastica of the vessels was normal.

DISCUSSION

DR. M. H. EBERT: I think that this is a clear case of syphilitic anetoderma, and it is interesting that the condition occurred in congenital syphilis. I have never seen this condition in congenital syphilis. There is much discussion as to whether lesions of this type appear at the site of the original macular eruption or whether they appear later. In this case I think that the atrophy appeared three or four years after birth; that was a little late to follow macular lesions.

DR. RUBEN NOMLAND: Dr. Scull has brought over from Provident Hospital three Negroes with syphilis in whom macular atrophy appears: this patient, a woman who has symmetrical atrophy with not particularly numerous lesions, and a third who, in addition to lesions of macular atrophy on the abdomen and sides of the chest, has lesions of a tertiary serpiginous type on the back. Dr. Scull has made biopsies in all the cases. The biopsies show much deeper damage to the elastic tissue than we have seen in other cases of macular atrophy, but there is no recognizable syphilitic inflammatory reaction. In addition to these cases we have seen two of macular atrophy of other types at the Central Free Dispensary and in none of them could the etiology be determined from microscopic examination of the lesions. Macular atrophy from syphilis, that from lupus erythematosus and the apparently idiopathic atrophy are not distinguishable from each other by the pathologic appearance.

CENTRAL STATES DERMATOLOGICAL SOCIETY

BERNHARD A. GOLDMANN, M.D., *Secretary*

Annual Meeting, Nov. 18, 1933

FREDERICK AMSHEL, M.D., *Presiding*

SCLEREDEMA. Presented by DR. W. H. GUY and DR. FREDERICK AMSHEL, Pittsburgh.

This girl, aged 8 years, one month following scarlatina had "hardening of the skin." She was referred to the Allegheny General Hospital by her family physician. On admission, seven months ago, the skin of the face, arms and trunk was hard and did not pit on pressure. The process began on the face and neck and spread slowly. The affected skin was waxy brown. There were tenderness and itching. The mouth could be opened with difficulty, the eyelids could not be retracted and motion of the arms was limited. The face appeared masklike. The patient had low grade fever for several weeks. There was mild nephritis, and a subacute inflammatory process was noted in the pharynx and the tonsils. The Wassermann and Kahn reactions of the blood were negative, and numerous blood counts were normal. The basal metabolism was —3. The liver extended four fingerbreadths below the costal margin. Cultures of material from the throat demonstrated

hemolytic streptococci and Streptococcus viridans. Sensitization tests with the hemolytic organisms were positive. Histologically there was little change in the epidermis. In the corium there was a sparse, rather diffuse infiltration of lymphocytes, for the greater part in the papillary layer. The most noteworthy change was thickening of the connective tissue bundles. There was some distortion of the hair follicles. The sweat glands were large but not cystic. The adipose tissue was normal.

Gradual improvement has occurred, and the process is now limited largely to the neck and arms. There is no atrophy or sclerosis in the areas previously involved.

DISCUSSION

DR. LESTER HOLLANDER, Pittsburgh: It is unfortunate that the condition has improved so much that there is no need for discussion. Dr. Guy should give a résumé of how the diagnosis was made. Have there been any febrile attacks?

DR. STANLEY CRAWFORD, Pittsburgh: What does Dr. Guy mean by scleredema? Is it scleroderma, an undeveloped sclerous condition of the corium or a crystalline change in the panniculus adiposus? The patient is evidently showing improvement.

DR. W. H. GUY, Pittsburgh: The erythematous lesions on the body are the remains of recently healed impetigo. Scleredema was originally described by Busche. Cases have appeared in the literature prior to Busche's presentation and since that time, usually being diagnosed as scleroderma. The condition follows acute infectious diseases. Our patient has associated nephritis. She had a low grade fever, the temperature never exceeding 100 F., for from two to three weeks. Material from the throat, which was inflamed, gave pure cultures of hemolytic streptococci. Histologically the distinctive feature is the swelling of the collagen as a result of a deposit of some unknown substance. There is absence of edema, dense infiltration and later atrophy such as are seen in scleroderma. The cases reported by Busche and Epstein showed this thickening of the connective tissue. The adipose tissue showed no deviation from the normal. The patient is improving, appearing slightly better on each weekly visit.

FAMILIAL TELANGIECTASIA. Presented by DR. W. H. GUY and DR. FREDERICK AMSHEL, Pittsburgh.

This woman, aged 47, first noticed a flat, red, macular, hemorrhagic lesion on the tongue at the age of 20, following the birth of her first child. Similar lesions appeared on the tongue and buccal mucosa, face, hands and feet, gradually increasing in number. The lesions vary in size from that of a pinpoint to that of a split pea. Hemorrhage from the nose and the tongue lasting two or three days has been annoying from time to time. Menstruation was normal until the menopause was established three years ago. The coagulation time, the results of the test for fragility of the erythrocytes, the blood chemistry, etc., were normal. The same condition has appeared as a dominant characteristic in five generations of the patient's family. Two children, aged 20 and 24, have the same condition but to a lesser extent.

ACQUIRED TELANGIECTASIA. Presented by DR. W. H. GUY and DR. F. M. JACOB, Pittsburgh

This woman, aged 26, presents rather diffuse telangiectasia of the face and neck and less extensive involvement of the dorsal surfaces of the hands and the shoulders. The process began three years ago following severe sunburn. The areas involved are those exposed to sunlight. She states that she has always been susceptible to sunlight and that the skin is itchy during the summer. There have been no similar cases in the family, but one sister suffers from polycythemia vera.

DISCUSSION

DR. H. J. PARKHURST, Toledo, Ohio: I feel that the patient has acquired telangiectasia of the parts exposed to sunlight, which was started by photosensitization. She says that all her life she has had pruritus of the exposed parts of the body following exposure to sunlight. The telangiectasia has developed within the last three years.

SCLERODERMA. Presented by DR. W. H. GUY and DR. F. M. JACOB, Pittsburgh.

This girl, aged 12 years, had a sclerodermatous process over the distribution of the supra-orbital nerve at the age of 7 years. The process continued to extend until about one year ago. A firm, depressed, white scar with partial depilation marks the site of the formerly active process. It is noteworthy that the hair has regrown to some extent in areas that were completely bald during activity of the process. The patient is presented for suggestions as to management.

DISCUSSION

DR. HERBERT BAUCKUS, Buffalo: Hemiatrophy is often associated with scleroderma. I should like to compare this condition with that of the patient whom Dr. Guy presented with a diagnosis of scleredema because both patients give a history of an attack of scarlet fever a year before the cutaneous condition appeared, and the cutaneous manifestations are possibly associated with the same cause.

DR. H. T. PHILLIPS, Wheeling, W. Va.: I saw a number of cases of scleroderma at the meeting of the Southern Medical Association in Richmond a few days ago. One of these was interesting in that the band of sclerodermatous tissue encircled the wrist to such an extent that spontaneous amputation of the hand was threatened. This band of tissue was dissected off by a surgeon and replaced by a pedicle graft; the graft "took" perfectly and is now sclerodermatous. The patient also had atrophy of part of the tongue and palate which resulted in ulceration and loss of the uvula. This condition of the tongue and the mucous membranes was said by the presenter to be sclerodermatous.

DR. LESTER HOLLANDER, Pittsburgh: I do not think that one can accomplish much with treatment in the case presented, because the process is arrested. In a case still in progress I have tried parasympathectomy, and in an instance in which there was danger of loss of function of the arm, parasympathectomy did a great deal of good. I merely suggest this as treatment for scleroderma of the linear type. In the case which I just cited, the scleroderma affected the extremities, where difficulty may result. As Dr. Barney suggests, parasympathectomy may have been tried on the temporal artery in the case presented by Dr. Guy and Dr. Jacob.

VASCULAR NEVUS. Presented by DR. LESTER HOLLANDER, Pittsburgh.

Miss H. M., aged 18, presents a unilateral vascular nevus which affects the inner surface of the right arm, the right palm and the right breast. The palm gives the appearance of Lane's disease (erythrodermia palmaris hereditaria).

DISCUSSION

DR. W. H. GUY, Pittsburgh: This case is of particular interest because of the association of red palm with a definite vascular nevus. It seems reasonable to believe that cases of red palm such as those described by Lane are nevoid.

DR. LESTER HOLLANDER, Pittsburgh: The patient was presented principally for the group from Cleveland because of the presence of Lane's disease. I thought they might be interested in seeing this condition in conjunction with a vascular nevus. The patient has had a good deal of electrodesiccation and two or three treatments with carbon dioxide snow, and the result is fairly good.

SARCOID. Presented by DR. F. M. JACOB, Pittsburgh.

Mrs. J. W., a white woman aged 49, presented herself at the St. Francis Hospital Tumor Clinic two years ago, showing nodules of the face of five years' duration. Biopsy at another hospital had led to a diagnosis of carcinoma. After some time, a tentative diagnosis of mycosis fungoides d'emblée was made. The patient's mother has a 4 plus Wassermann reaction and gummatous lesions on one shoulder, but the patient's Wassermann reaction has been repeatedly negative, and she has five healthy children. Repeated biopsies have not shown any malignancy. She has been given arsphenamine and potassium iodide without improvement, and only slight improvement was shown with roentgen therapy. There are now a number of nodular lesions on the face. They are deep red, almost purple, are slightly elevated and merge into the surrounding skin. They vary from 0.5 to 4 or 5 cm. in diameter. The history and various examinations have shown nothing of importance.

The histologic section which I am presenting has been examined by several physicians, whose opinions regarding it varied.

DISCUSSION

DR. F. M. JACOB, Pittsburgh: Dr. Guy suggested the diagnosis of sarcoid as a result of exclusion. The patient has wandered around to different hospitals. A diagnosis of carcinoma was made in one hospital, but it was either an intercurrent carcinoma or carcinomatous degeneration of an ulcerated lesion. She has had a number of different treatments and has not responded to any of the agents which usually affect the diseases suggested by this picture. The histologic changes are not typical of but suggest sarcoid.

SARCOID. Presented by DR. LESTER HOLLANDER and DR. J. J. HECHT, Pittsburgh.

Mrs. S. M., aged 39, a Slavonic housewife, presents an eruption of seven years' duration on the face, hands and feet. There are three rounded, infiltrated, reddish-brown lesions on the face. They are traversed by a number of dilated vessels, and diascopic pressure intensifies the brownish color.

The distal phalanges of all the fingers and toes and the middle phalanges of the first, third and fifth fingers of the left hand and the fifth finger of the right hand are widened, enlarged and flattened, giving the fingers and toes a cat-o-nine-tail appearance. In these areas the skin is atrophic, reddish brown and telangiectatic.

Roentgen examination revealed a spongy character of the bones and the presence of osteitis tuberculosa multiplex cystica.

DISCUSSION

DR. STANLEY CRAWFORD, Pittsburgh: The cystic changes in the bones are similar to those described by Schaumann in cases of benign lymphogranuloma and are evidently seen in association with cutaneous sarcoid with increasing frequency.

DR. LESTER HOLLANDER, Pittsburgh: This is an interesting case because it has all the characteristics that the Danes describe for the diagnosis of sarcoid. Osteitis tuberculosa multiplex cystica is specific for sarcoid. Those who attended the International Dermatological Congress in Copenhagen, Denmark, saw twenty-four cases presented by Rasch and Kissmayer, four or five of which showed these osseous changes. Kohler, who is one of the outstanding roentgenologists in the world, stated that the osseous changes are tuberculous, giving them the name osteitis tuberculosa multiplex cystica. I use tuberculin in treating these patients, and the results obained are fair.

SARCOID. Presented by DR. LESTER HOLLANDER, Pittsburgh, and DR. J. E. FISHER, Pittsburgh.

Mrs. L. T., aged 43, an Italian housewife, presents a dark red nodular eruption which involves the lateral and inner surfaces of the upper part of the left leg and

the greater portion of the left thigh. It consists mostly of confluent nodules, but a few lesions are discrete. The latter are rounded, elevated, fairly firm and telangiectatic and assume a brownish hue on diascopic pressure; they vary in size from that of a pea to that of a bean. In areas the epidermis is considerably atrophied and shows a cigaret-paper-like consistency with wrinkling.

The duration of the eruption is uncertain; the patient states that it has been present since birth, but we doubt the veracity of this statement.

Biopsy showed the lesion to be granulomatous; its architecture gave the suggestion of sarcoid. All laboratory examinations have given negative results except that recently the white blood cell count has shown an increase to about 15,000. Injections of tuberculin caused intense reactions with some improvement in the lesion.

DISCUSSION

DR. C. G. LAROCCO, Cleveland: The patient insists that the condition has been present since birth. I favor a diagnosis of vascular nevus.

DR. STANLEY CRAWFORD, Pittsburgh: I agree with Dr. Hollander that the most likely diagnosis is sarcoid, but the type is unusual because of the marked vascular involvement. I do not see how the condition could have existed since birth, and the lesions are too infiltrated to be regarded as vascular nevi.

DR. I. J. ARNSSON, Buffalo: The condition satisfies every criterion for the histologic diagnosis of sarcoid of Boeck or benign miliary lupoid. There are no changes in the epidermis, and the changes in the cutis consist of circumscribed infiltrates of epithelioid cells and round cells, with no nevoid cells. I cannot see what other features are required for the diagnosis of sarcoid of Boeck.

DR. LESTER HOLLANDER, Pittsburgh: As we stated, the patient insists that the eruption has been present since birth, but we do not believe that statement unless she has sarcoid which began as an intra-uterine lesion, which is hard to conceive. It is peculiar that there are so many cases of sarcoid in the Pittsburgh district. We have seen twelve cases in a period of eight or nine years in which the diagnosis was definitely established by histologic examination. The question of sarcoid is still in the air, especially from the etiologic standpoint. The Danes insist that this is a specific disease between tuberculosis and leprosy. We have studied the condition from the standpoint of tuberculosis, and although the architecture of the lesions suggests it, the results of inoculation of guinea-pigs have been negative. Whether that confirms the contention of Kyrle that sarcoid has a picture typical of tuberculosis but that the tubercle bacillus is demonstrable in the early lesion only I do not know.

CRYPTOCOCCIC INFECTION OF THE PALATE. Presented by DR. W. H. GUY and DR. F. M. JACOB, Pittsburgh.

This woman, a housewife aged 59, presents a rough, rather sharply marginated, white lesion of the posterior portion of the palate. When first seen, one year ago, she had a carcinoma the size of a half-dollar at the left of the lesion just described. This proved to be a prickle cell growth, and it was eradicated by means of implantation of radium seeds and filtered roentgen irradiation of the gland-bearing area. The white area was considered leukoplakia; on two occasions it was removed by electrodesiccation and radium, respectively, but promptly reappeared. Cultures, and smears, which are presented, reveal a double-contoured yeast which does not form mycelia or spores and which is tentatively classed as Cryptococcus.

DISCUSSION

DR. I. J. ARNSSON, Buffalo: The presence of Cryptococcus may be accidental. Clinically the condition looks like leukoplakia, and that may be the reason for the recurrence after treatment.

DR. SAMUEL GOLDBLATT, Cincinnati: Intradermal injections of vaccine might give good results.

DR. H. T. PHILLIPS, Wheeling, W. Va.: I believe that the lesion is leukoplakic and that the cryptococcic infection is engrafted on it. A cure can probably be effected by thorough desiccation and curettage of the whole area.

DR. ELMORE B. TAUBER, Cincinnati: I disagree with Dr. Phillips concerning desiccation and curettage. I favor removal of the tonsils or the use of a vaccine made from cultures from the tonsils, as the possible site of infection and reinfection may be in these organs.

DR. LESTER HOLLANDER, Pittsburgh: Two conditions are to be considered. Dr. Guy originally found a prickle cell carcinoma. The condition may also have begun as leukoplakia. The cryptococcic infection is superimposed. In regard to the treatment of leukoplakia, I disagree with Dr. Phillips. McKee states that this condition is the most recalcitrant to treatment, which I know to be a fair statement. I do not think much would be gained by electrodesiccation in this case. My experience with recurrent leukoplakia is that the less treatment one gives the better for the patient. Dr. Guy has struck something ingenious in this case by using a digestant powder locally, and the improvement certainly shows that it was of benefit.

DR. HERBERT BAUCKUS, Buffalo: The present ulcerative appearance of the lesion indicates that it will become malignant, and I think it should be removed.

DR. W. H. GUY, Pittsburgh: When first seen one year ago the patient had a fungating carcinoma involving the right anterior tonsillar pillar which was apparently successively treated by implantation of radium and roentgen irradiation. The present condition, which coexisted with the carcinoma, was considered leukoplakia. Cautery electrodesiccation and implantation of radium eradicated the lesion at different times, but it recurred in approximately three weeks. Smears and cultures revealed an almost pure culture of yeastlike organisms. We do not believe that the condition is leukoplakia. Castellani has reported a number of similar cases due to cryptococcic infection. We have used iodine, potassium iodide and local applications of a variety of medicaments without effect. We are now using a digestant powder consisting of the active principle of the powder as a local application with some improvement.

DR. F. M. JACOB, Pittsburgh: This culture was first grown at room temperature on Sabouraud's medium, and we found nothing but round bodies, no inclusion bodies, and the only description that would fit was Cryptococcus. Dr. Helmbold made some cultures in beef infusion broth which revealed only round organisms, but in buffered broth long, cigar-shaped organisms began to develop.

BENIGN ERYTHEMATOID BASAL CELL EPITHELIOMA. Presented by DR. STANLEY CRAWFORD, Pittsburgh.

Miss V. A., aged 23, presents an orbicular lesion of three and one-half years' duration on the left side of the chest near the midline, over the sixth rib. It measures 2 cm. in diameter and is bordered by a fine, sinuous, pearly elevation 1 or 2 mm. in diameter. Within this ringlike border the skin is finely atrophic and distinctly red, with slightly dilated capillaries. The only subjective symptom is a slight crawling sensation at times. There is a similar lesion of about the same duration on the left side of the back near the midline, at about the level of the fifth rib. The lesion on the back has been treated with roentgen radiation.

DISCUSSION

DR. H. JERRY LAVENDER, Cincinnati: The mother states that the patient took "Ex-Lax," "Feenamint" and other forms of phenolphthalein. It is not unusual for that drug to produce lesions similar to these, and I favor a diagnosis of phenolphthalein eruption.

DR. RICHARD SAUNDERS, Buffalo: The diagnosis of phenolphthalein eruption is questionable. The two cystic bodies can be seen only under a magnifying glass. I believe the diagnosis is basal cell epithelioma.

DR. E. W. NETHERTON, Cleveland: I think I saw a remnant of small pearly margin, and I agree with the diagnosis of the presenter, benign erythematoid epithelioma.

DR. C. B. NORRIS, Youngstown, Ohio: Confirming the diagnosis is the history that the patient had chorea. Solution of potassium arsenite was taken for many weeks several years ago.

DR. STANLEY CRAWFORD, Pittsburgh: The fine pearly border is distinctly visible under the magnifying glass. There is no history of the patient having taken arsenic.

NOTE.—At Dr. Lavender's suggestion, 1½ grains (0.09 Gm.) of phenolphthalein was given to the patient. It produced no change or reaction in the lesion.

JUVENILE ACRODYNIA. Presented by DR. STANLEY CRAWFORD, Pittsburgh.

C. D., a girl, aged 21 months, of Italian parentage, has shown marked irritability for six months. Five months ago the hands and feet became red and slightly swollen, and the fingers became sausage-shaped and lost their tapering character. When the hand is extended, the middle finger is separated from the two lateral fingers, suggestive of a trident. There is no pitting on pressure, and the skin feels cold. The skin over the trunk and extremities is pale, feels cool and clammy and periodically exhibits a small reddish, papular eruption. Sweating is marked at times. Palpation of the skin causes pain, and the child resents being handled. At times there is gingivitis, and the upper incisor teeth show wide notchings created by the dropping out of the central free border recently. There is drooling of saliva. At no time has photophobia been present. A blood count showed: erythrocytes, 3,500,000; leukocytes, 11,000, and lymphocytes, 60 per cent. The temperature has varied from 98 to 100 F. The child has no appetite.

DISCUSSION

DR. EMERSON GILLESPIE, Canton, Ohio: In some cases of acrodynia I have seen improvement after large doses of viosterol. Vitamin deficiency is considered one of the causes of the disease, and I favor that theory.

MYCOSIS FUNGOIDES. Presented by DR. W. H. GUY and DR. FREDERICK AMSHEL.

This colored woman, aged 37, presents a markedly pruritic generalized eruption of four years' duration. She has lost 30 pounds (13.6 Kg.) in weight. The lesions comprise diffuse, gyrate and annular eczematous-appearing areas and infiltrated, rather sharply marginated lesions of various sizes and shapes. The Wassermann and Kahn tests have been negative. Blood counts have given completely negative results and the blood chemistry has been normal. Nasal secretions and tissue have been examined for Hansen's bacillus with negative results. Several biopsies have been made on different types of lesions, none of which presented a typical picture of mycosis fungoides; leukemia and lepra were seemingly eliminated, however. The patient is improving under roentgen therapy. Sections are presented.

OCULAR PEMPHIGUS. Presented by DR. STANLEY CRAWFORD.

Mrs. J. M., aged 51, had tender inflamed gums with some swelling and a yellowish gummy discharge along the alveolar margins in 1929. About this time the pharyngeal walls were periodically red and inflamed. Vincent's organisms were found, and she improved with local treatment. The mouth was inflamed again several months later, and most of the molar teeth were extracted, following which the gingival inflammation subsided. In 1932, twenty-five teeth were extracted. For the past two years she has had periodic bright red, slightly infiltrated inflammations of the conjunctivae of the upper and lower lids of both eyes. These

inflammations subside and leave bandlike cicatricial tissue. Several attacks have resulted in binding of the conjunctiva to the eyeball. At no time has she shown cutaneous lesions. Flat, irregular bullae have developed periodically in the pharynx and conjunctivae, those of the conjunctivae gradually obliterating the normal culde-sacs. She has frequently complained of a crackling sensation in the upper nasal cavity. A blood count showed: erythrocytes, 4,800,000; leukocytes, 15,000; polymorphonuclears, 73 per cent; lymphocytes, 22 per cent; monocytes, 3 per cent; basophils, 1 per cent, and eosinophils, 1 per cent.

DISCUSSION

DR. W. H. GUY, Pittsburgh: I first saw the patient through the courtesy of an ophthalmologist, and at that time she certainly had what looked like buliae in the eyes. Of course, there is always a question of diagnosis after the condition quiets down, but at that time it looked like pemphigus.

DR. H. JERRY LAVENDER, Cincinnati: Were Vincent's organisms found originally in this case?

DR. LESTER HOLLANDER, Pittsburgh: I saw and treated one patient of Dr. Guy's who had no cutaneous lesions. We gave her blood transfusions, and she did rather well. The condition lasted for sixteen months. The lesions occurred only in the eye, and there was practically no atrophy as a result.

DR. ELMER C. LOOMIS, Dayton, Ohio: At present I have a patient, seen by several of the members, with a condition which may be pemphigus. There are lesions of the skin, mucous membranes and eyes. One eye is completely closed, and the other practically so, by synechiae. I have not seen any bullae of the conjunctivae, but otherwise there is typical pemphigus.

DR. J. EDGAR FISHER, Cleveland: I suggest that a phytopharmacologic test be made.

DR. STANLEY CRAWFORD, Pittsburgh: At present the process is quiescent, so it is difficult to make a diagnosis. There is a small patch of inflammation with slight erosion on the inner surface of the upper lip. Three Pels-Macht tests were made, but the results were negative. Dr. Phillips asked about the course of such cases, but as I have not seen one previously I can reply only on the basis of the literature. Repeated conjunctivitis causes the lids to be bound to the eyeball with scar tissue so that there is gradual lessening of the opening of the eyelids. Lesions occur on the buccal and pharyngeal mucosa and possibly on the intestinal mucosa, but at no time do they occur on the skin. The patient slowly or rapidly loses weight, and fatal cachexia develops.

PHALANGEAL OSTEOMYELITIS (SYPHILITIC) WITH PATHOLOGIC FRACTURE. Presented by DR. STANLEY CRAWFORD, Pittsburgh.

B. M., a colored woman aged 34, has had a marked fusiform swelling of the right fourth and fifth fingers and the left third finger for two years. Roentgen examination showed marked osteomyelitis of the involved phalanges with pathologic fracture at the base of the first phalanx of the right fifth finger and running diagonally through the diaphysis of the second phalanx of the right fourth finger.

DISCUSSION

DR. J. R. DRIVER, Cleveland: I believe that the condition is sarcoid. The changes in the bones are similar to those in the other cases of sarcoid presented. The patient shows some nodular lesions about the nares. If the condition were syphilis one would expect her to have no active lesions at this time, as she has had a number of injections of bismuth in the hip. The lesions about the nares certainly look like sarcoid.

DR. E. W. NETHERTON, Cleveland: I think the lesions around the nose resemble sarcoid or lupus rather than syphilitic lesions. The changes in the bones

are similar to those in the cases of sarcoid. Because of these osseous changes, I suggest that a study of the calcium content of the blood be made.

DR. F. M. JACOB, Pittsburgh: The patient has syphilis, but I believe that syphilitic lesions of the bone do not cause such destruction, and I suggest consultation with roentgenologists on these plates.

DR. LESTER HOLLANDER, Pittsburgh: I believe that that the condition is sarcoid. The so-called fractures are in reality osteitis multiplex cystica. The cutaneous lesions have all the characteristics of sarcoid.

DR. STANLEY CRAWFORD, Pittsburgh: I welcome the suggestion of sarcoid. I considered the infiltration about the nares as syphilis, and the roentgenologist made a diagnosis of syphilis in the involved phalanges. The blood gave a 4 plus Wassermann reaction. The studies of blood calcium suggested by Dr. Netherton will be carried out. The patient has had about eight injections of bismuth salicylate without much change in the lesions of the nose or of the bones.

A CASE FOR DIAGNOSIS. Presented by DR. STANLEY CRAWFORD, Pittsburgh.

K. M., a colored girl aged 10, presents ichthyotic skin with large and small, discrete and confluent patches of atrophy showing considerable capillary dilatation. The condition is most marked on the anterior and posterior surfaces of the trunk but extends upward over the neck and the midportion of the face. The tongue shows considerable atrophy, is smooth, cherry red and glossy and along its right border presents a superficial erosion of rectangular shape. The condition commenced at the age of 6 years with small bullae over the trunk. The bullous eruption persisted for several months and has not recurred. According to the mother, there is no history of bullous lesions developing with trauma. The child has taken phenolphthalein tablets weekly for two years. The condition of the skin in its general appearance is suggestive of poikiloderma, and there is a possibility that the repeated administration of phenolphthalein has induced endarteritis with atrophy in the skin and tongue.

DISCUSSION

DR. ELMORE B. TAUBER, Cincinnati: Because of the multiplicity of lesions, the pigmentation, the bullae and the dystrophy of the nails, I consider the condition epidermolysis bullosa.

DR. H. J. PARKHURST, Toledo, Ohio: In view of the ichthyotic condition of the skin, the condition may perhaps better be considered congenital ichthyosiform erythrodermia of the bullous type.

DR. LESTER HOLLANDER, Pittsburgh: With the bullous eruption of the hands and of the tongue, which the child says follows trauma, I consider epidermolysis bullosa as the most likely diagnosis.

DR. E. W. NETHERTON, Cleveland: I thought of pemphigus vulgaris. There are many bullous lesions on the tongue, as well as on the palms and buttocks. There is a marked systemic reaction; the patient has lost considerable weight and seems to be going down hill gradually.

DR. J. EDGAR FISHER, Cleveland: I agree with Dr. Netherton that the condition is pemphigus vulgaris.

DR. RICHARD SAUNDERS, Buffalo: I agree with Dr. Netherton and Dr. Fisher that this is a case of pemphigus vulgaris.

DR. H. T. PHILLIPS, Wheeling, W. Va.: The patient gives a history of the development of bullous lesions following trauma, which certainly suggests that epidermolysis bullosa is a part of the picture.

DR. STANLEY CRAWFORD, Pittsburgh: The bullous lesions present in each palm are the first that I have seen, and I agree with the diagnosis of epidermolysis bullosa. When I questioned the mother, she told me that the bullae did not develop from injury.

SCHAMBERG'S PROGRESSIVE PIGMENTARY DERMATOSIS. Presented by DR. STANLEY CRAWFORD, Pittsburgh.

R. L., aged 42, presents over the middle of the anterior surface of the right leg an area 5 by 7 cm. of café au lait color with numerous small, bright, capsicum-like, punctate capillary dilatations. The epidermis shows slight atrophy. There are three similar but smaller areas on the anterior surface of the right leg and two on the left leg. The condition is of ten months' duration.

DISCUSSION

DR. I. J. ARNSSON, Buffalo: Has a biopsy been made? The condition impressed me as being xantho-erythrodermia perstans.

BRANCHIAL FISTULA (FIRST ECTODERMAL FOLD). Presented by DR. STANLEY CRAWFORD, Pittsburgh.

W. S., aged 5, has presented since birth an opening 1 mm. wide immediately anterior to the crus of each auricle, about 1 cm. above the tragus. Each fistula has become slightly cystic at times, and a small amount of thick creamy material could be expressed. A subcutaneous abscess developed in front of the left ear as a result of expressing the material from the left fistula. The first branchial groove forms a part of the ear and the external auditory canal and joins in embryonic life with the first branchial pouch, which forms the inner portion of the auditory canal and the tympanic cavity. These lesions are vestiges of the first branchial groove.

XANTHOMA TUBEROSUM MULTIPLEX. Presented by DR. LESTER HOLLANDER, Pittsburgh.

H. K., a man aged 43, presents a slightly elevated, chamois-colored eruption on the nape of the neck, the arms, the buttocks and the knees. There is a single lesion on the roof of the mouth. The lesions are of six months' duration and are fading. Some are more reddish brown than others. The patient had a similar attack fourteen years ago, when he was under the care of Drs. Cole and Driver, who made a diagnosis similar to mine. When I first saw him, six weeks ago, marked glycosuria was present, but this disappeared rapidly. The blood sugar has been low, but the cholesterol content has ranged between 300 and 400 mg. per hundred cubic centimeters. There have been marked subjective symptoms at times, the patient complaining of tenderness and pain. The lesions show an inflammatory tendency, and in that respect they resemble xanthoma diabeticorum.

LICHEN PLANUS. Presented by DR. LESTER HOLLANDER, Pittsburgh.

J. V., aged 30, an American, presents a papular, disseminated eruption of three months' duration on the face, neck, shoulders, chest, upper extremities, mouth and glans penis. The eruption has a distinctly bluish cast except on the forehead and face, where a brownish discoloration may be noted. The individual lesions conform to the description of lichen planus. A curious configuration may be noted on the left shoulder, where there is an ashen-gray, elongated, flat lesion with central atrophy which is demarcated from the rest of the skin by a papular eruption. The patient is presented on account of the marked facial involvement. Biopsy confirmed the diagnosis of lichen planus.

DISCUSSION

DR. R. E. BARNEY, Cleveland: The striking features of this case are the marked involvement of the face and the residual pigmentation. I did not see any typical lesions of the mucous membranes, but there are pinhead-sized translucent papules resembling vesicles on the soft palate, which I believe occur normally in this location and are in all probability mucous cysts.

DR. LESTER HOLLANDER, Pittsburgh: Vesicular lesions on the mucosa in lichen planus were mentioned by Kren. In describing lichen planus of the mouth, he spoke of vesicular lesions which occur only on the soft palate. I thought I saw such lesions in this patient, although, as Dr. Barney states, they may be only retention cysts.

A CASE FOR DIAGNOSIS. Presented by DR. B. A. GOLDMANN, Pittsburgh.

P. M., a white man aged 24, presents scattered superficial, slightly pigmented scars on the backs of both hands. There are also several superficial crusted and secondarily infected lesions, which the patient attributes to trauma. Over the first joint of the left index finger there was a papule about twice the size of a pinhead which was removed for biopsy. The primary lesions were bullae which lasted but a short time. They ruptured and were covered with a superficial crust, which on healing left a scar.

The patient states that about two years ago he first noticed that both hands, but not the feet, became cold and that the least trauma caused festering. There have been periods when the hands would get warm, but as a rule they are cold. The feet have never been involved.

The Wassermann and Kahn tests were negative, the urine was normal, and the blood count showed leukocytosis (16,100 white cells) with a relative lymphocytosis and 5 per cent eosinophils. Roentgen examination showed the bones of the hands to be normal.

Biopsy showed hyperkeratosis, parakeratosis, epithelial cysts, dilatation of the blood vessels and a moderate amount of lymphocytic and polymorphonuclear infiltration.

The patient is presented without a definite diagnosis, although the following diagnoses were considered: (1) epidermolysis bullosa acquisita, (2) lupus pernio and (3) angiokeratoma.

DISCUSSION

DR. HERBERT BAUCKUS, Buffalo: I should add an additional diagnosis of erythema multiforme. The dorsal lesions always began with blebs associated with an erythematous eruption. There are a few erythematous lesions on the back of the neck. I think this rather suggests erythema multiforme, or possibly an eruption due to phenolphthalein.

DR. H. J. PARKHURST, Toledo, Ohio: The condition presents more features of lupus pernio than of any other condition.

DR. I. J. ARNSSON, Buffalo: The diagnosis of lupus pernio as well as that of angiokeratoma should not be considered. The histologic picture rules them out. The presence of epithelial cysts may be accidental. They may be found with any dermatosis, and I should not call them characteristic of this particular lesion. Moreover, the clinical picture is not that of lupus pernio, as generally in lupus pernio the color is somewhat between that of sarcoid and that of idiopathic sarcoma of Kaposi. Deep infiltrations are always present in lupus pernio, as histologically the process is limited to the deep strata of the cutis and not to the superficial ones as in this case. Like Dr. Bauckus, I should consider erythema exudativa multiforme.

DR. W. H. GUY, Pittsburgh: The primary lesions are bullous. Bullae have been seen after subjecting areas to trauma. I interpret the condition as a vascular disturbance with secondary cutaneous lesions following trauma, simulating epidermolysis bullosa.

DR. LESTER HOLLANDER, Pittsburgh: I do not know what history the patient has given the presenter, but I asked him several times if he had frost-bite and he said he did not. The lesions are either self-produced or manifestations of epidermolysis bullosa, as they follow trauma. I believe that they are self-produced.

DR. EARL EATON, Buffalo: I should take into consideration a self-produced dermatitis on account of the irregular shapes. The scars are very irregular, not circular. There is absolute anesthesia of the cornea and pharynx.

DR. T. R. HELMBOLD, Pittsburgh: Single sections of the tissue show a ductlike structure opening on the surface which is filled with cornified material and nearby a cystlike formation immediately beneath the epithelium. This structure is lined with thin stratified squamous epithelium and contains concentrically arranged cornified material which in the lower portion is displaced upward to form an empty clear space as though it contained fluid. Serial sections from the tissue block show these formations to join as a continuous structure, apparently representing a duct which has undergone some change and is filled with cornified material. The blood vessels show some swelling and proliferation of the endothelial lining, but the changes are not characteristic of any process. The tissue shows some small round cell infiltration in the superficial cutis which tends to be perivascular and where the involvement is most intense tends to involve the deeper epithelium, as in the early stages of psoriasis. The sections stained for elastic tissue show a normal distribution of this material in the cutis.

DR. B. A. GOLDMANN, Pittsburgh: The patient gives a history of having been a dishwasher and having his hands immersed in water a great deal. It is possible that this caused some injury to the tissues and that he has a peculiar vasomotor disturbance. No definite diagnosis can be made at this time, but though there are no lesions on the feet, with the history of bullae forming following injury one may label the condition epidermolysis bullosa acquisita.

HAIR MATRIX (BASAL CELL) CARCINOMA. Presented by DR. G. J. BUSMAN, Pittsburgh.

S. L. B., a man aged 39, married, presents a large fungating, raised lesion on the right side of the anterior wall of the chest. The borders are sharply outlined and definitely raised, with a "pearly" fibrous ridge. The surface of the entire lesion is soft and spongy, and it bleeds easily on irritation. The central area is depressed and somewhat necrotic, apparently extending deep into the subcutaneous tissue. There are no miliary abscesses.

The lesion began two years ago as a small warty growth. No treatment has been administered except 4 skin units of roentgen radiation. The pathologic diagnosis on a specimen from the border of the lesion was hair matrix (basal cell) carcinoma of the skin of the wall of the chest. Suggestions as to therapy will be welcomed.

DISCUSSION

DR. C. B. NORRIS, Youngstown, Ohio: I had a case similar to this in which I used electrocoagulation and roentgen radiation. The scar is soft, and I consider that the result is good.

DR. ELMORE B. TAUBER, Cincinnati: Since the patient has already received 4 skin units of roentgen radiation it seems to me that to ask for suggestions as to therapy is putting the cart before the horse. I do not believe there is any necessity for further therapeutic care, and I should like to hear about the case sixty or ninety days from now.

DR. GEORGE J. BUSMAN, Pittsburgh: I did not believe that I could rely on 4 skin units of roentgen radiation. I considered extensive destruction by electrodesiccation, to be followed by roentgen irradiation, and I put the cart before the horse by administering the roentgen treatment first so that some of the lesion would be left to present at this meeting.

MELANOMA OF THE TEMPLE WITH METASTASES TO THE GLANDS. Presented by DR. LESTER HOLLANDER, Pittsburgh.

E. H., a man aged 42, presents a flat, black mole which is of fifteen years' standing but recently began to enlarge, ulcerate and metastasize. There are two masses on the same side, one opposite the ear and one at the angle of the jaw. The patient has received 18 units of roentgen irradiation of the lesion and is

receiving filtered irradiation of the glands. The inflammatory reaction about the lesion is due to the roentgen therapy.

DISCUSSION

DR. LESTER HOLLANDER, Pittsburgh: I am not presenting this patient with the idea that he may be permanently cured. The only point of the treatment is palliation. Dr. Tauber suggested that 4 units of roentgen radiation would be enough. I disagree with that. He should have 18 units unfiltered, and this should be given in a period of a week. We have done that. One would expect a tremendous inflammatory reaction, but this did not occur. Treatment for melanoma should be wide of the lesion, directed as far as possible into what appears to be normal skin.

HERPES ZOSTER GENERALISATA. Presented by DR. STANLEY CRAWFORD, Pittsburgh.

J. B., a man aged 78, has in the past ten days acquired grouped vesicular lesions showing hemorrhagic contents along the anterior surface of the right arm over the distribution of the sixth cervical nerve. The lesions are dried into hemorrhagic crusts. Discrete lesions of the same character have appeared scattered over the left side of the chest and back and along the outer surface of the left arm. Each lesion is a rounded, dried, hemorrhagic crust, and in a slight depression of the skin around it is a narrow halo of erythema. There was sharp pain in each lesion at its onset, and later the patient complained of numbness along the mesial portion of the right hand. All the lesions are in the same evolutionary stage.

DISCUSSION

DR. W. H. GUY, Pittsburgh: In differing as to the diagnosis I am actually not differing with the presenter. I raise the question whether the condition is generalized herpes zoster or, as I would suggest, herpes zoster associated with varicella. The lesions are discrete and scattered, except for the one typical linear area.

DR. R. E. BARNEY, Cleveland: The patient on careful questioning denies having zoster-like pain in the arm. There is no regional adenitis. I thought of the possibility of mild diabetes with associated pruritus and secondary pyodermia due to scratching.

CLOSING REMARK. DR. W. H. GUY.

Dr. Robinson of the Allegheny General Hospital presented a method for growing animal parasites on artificial culture mediums. He does not believe that the parasite presented today is Acarus scabiei. It was accidentally picked up on a culture of fungi from clinical dermatophytosis. He used potato medium, on which this parasite grows and reproduces profusely. Experiments are being continued, an attempt being made to isolate Acarus scabiei.

NEW YORK DERMATOLOGICAL SOCIETY

R. H. RULISON, M.D., *Secretary*

Regular Meeting, Nov. 28, 1933

EDWARD R. MALONEY, M.D., *President*

A CASE FOR DIAGNOSIS (DRUG ERUPTION?). Presented by DR. R. H. RULISON.

Mrs. J. K., aged 40, a housewife, has had a dusky red, oval, macular patch on her left cheek for two years. The lesion has varied in appearance from time to

time and occasionally has almost disappeared. It has been treated by various physicians, and several diagnoses have been made. I consider the condition dermatitis medicamentosa due to the ingestion of phenolphthalein. The patient insists that she has not taken this drug during the past two years but says that she took it regularly before that.

She took 3 grains (0.195 Gm.) of phenolphthalein at my request as a test, and no exacerbation of the eruption occurred.

DISCUSSION

DR. GEORGE M. MACKEE: As there is now little eruption, it is necessary to depend mainly on the history. There are still two or three areas of pigmentation where the eruption was located, but one small area of very slight dermatitis is the only active lesion. She states that there are remissions and exacerbations and that at the time of an exacerbation there is a mixture of colors, red and brown, that produces a purplish or violaceous appearance. I think that it is necessary before reaching a diagnosis to rule out the possibility of a phenolphthalein eruption. The presenter did that to a large extent by administering phenolphthalein, but one test is not conclusive, in my opinion, because there seems to be in some instances a fluctuating allergy or sensitivity. Ingestion of the drug sometimes gives a negative and sometimes a positive result. Other diagnoses may be considered, such as so-called Berlock's dermatitis. I think that the main thing now, however, is definitely to rule out a phenolphthalein eruption, particularly because phenolphthalein is put in so many articles of food.

DR. HOWARD FOX: I think that the sine qua non in the diagnosis of a phenolphthalein eruption is the flare-up in the lesions when the drug is administered. The credit for this observation belongs to Abramowitz. Until recently I was under the impression that I showed the second case of phenolphthalein eruption recognized. I found, however, that Abramowitz and I described the first case independently. I presented a woman with this condition before the Manhattan Dermatologic Society, and a few months later her case was described by Abramowitz, his article having been received for publication a week before my presentation. Our observations were made independently.

DR. R. H. RULISON: I am particularly interested in any other diagnosis than a drug eruption. The patient has been treated by two or three physicians, and one of them made a diagnosis of some form of tuberculous eruption. Is there anything that suggests a tuberculous eruption, such as sarcoid?

NOTE.—No one suggested any other diagnosis.

LUPUS VULGARIS. Presented by DR. E. F. TRAUB for DR. LUTHER KICE.

Mrs. A. E., aged 56, born in Germany, presents a typical chronic nodular and atrophic eruption involving the entire left side of the face. The disease is of forty years' duration, and during this period she has received numerous treatments with x-rays, radium and ultraviolet rays and applications of many kinds of caustics. Complete excision of the affected area and replacement by a skin graft were done early in the disease, but there was recurrence not only about but in the graft. A lupous carcinoma was excised. For the past three or four months the patient has been given a balanced salt-free diet, and the condition has improved materially. However, as there is still an actively advancing border, we present her for suggestions as to therapy.

DISCUSSION

DR. FRED WISE: Has the patient ever been treated with pyrogallol ointment? That is the only thing that I would suggest. I should allow a long time to elapse between the last roentgen treatment and the application of the ointment.

DR. HOWARD FOX: This case reflects badly on this rich country, in which there is not a single institute for radiation therapy similar to the many that are

scattered over Europe. The favorable results of phototherapy in a case like this are well known.

DR. GEORGE M. MACKEE: In addition to the salt-free, vitamin-rich diet, I suggest that Dr. Traub use injections of carefully graded tuberculin. In this type of lupus, in which there is a remission and elementary lesions are plainly seen, it is possible to obtain good results by the long continued use of tuberculin. I should, moreover, be inclined to give ultraviolet therapy over the whole body. I also suggest local ultraviolet therapy, adhering to the Finsen-Reyn principle but not necessarily to the Finsen-Reyn technic. It is possible to do this with large doses from the water-cooled quartz mercury vapor arc lamp under firm pressure.

DR. HOWARD FOX: It is reasonable to consider leaving the process alone. It has existed for forty years without involving the mucous membranes.

DR. E. F. TRAUB: The border of the patch of lupus is still active, although the salt-free diet has brought about a great deal of improvement in the center of the patch. As the patient fears further peripheral spread we should like to do everything that is possible to prevent this. The old portion of the lesion is largely scar tissue with little if any activity.

HERPES MENSTRUALIS. Presented by DR. F. C. COMBES.

H. O., a white woman, aged 24, gives a history of recurring patches of simple herpes which have appeared monthly just prior to menstruation for approximately ten years. At first they occurred about the elbows and the knees as coin-sized erythematous patches surmounted by confluent fragile vesicles. For the past two years they have spread over the trunk and face, from one to two dozen lesions appearing at each outbreak. There is no apparent functional or anatomic abnormality of the genital organs.

She has been treated to saturation with both solution of potassium arsenite and arsenic in the form of pills, with slight amelioration. The intracutaneous injection of vaccine virus, as suggested by Dr. Wise for the treatment of herpes recurrens, was without effect. She is presented for suggestions as to further treatment.

PAGET'S DISEASE OF THE NIPPLE. Presented by DR. J. FRANK FRASER.

Miss M. B., aged 31, was presented before the Manhattan Dermatological Society in October, 1933.

DISCUSSION

DR. GEORGE M. MACKEE: This case shows the necessity for making a careful and, if necessary, an extensive histologic examination in such cases. The condition is clinically Paget's disease. Histologic examination on two occasions gave results contraindicating this diagnosis, yet a more careful serial examination of the material corroborated the clinical opinion. I have had that experience in two other cases. In both instances the general pathologists failed to make the diagnosis but were kind enough to give me the tissue, and by careful examination and study my associates and I were able to confirm the clinical diagnosis of Paget's disease.

DR. JEROME KINGSBURY: When I saw this patient at the meeting of the Manhattan Dermatological Society I expressed the opinion that amputation of the breast was clearly indicated. I still feel that time is being lost by delaying the operation. As in most cases of Paget's disease, the malignant process extends much deeper than the involved nipple.

DR. F. C. COMBES: I saw this patient a year ago. I made a clinical diagnosis of Paget's disease and recommended that biopsy be done and that the breast be amputated. It is interesting that the lesion has not changed.

DR. J. FRANK FRASER: An interesting feature of the case, spoken of by Dr. MacKee, is the importance of making repeated histologic examinations and studying serial sections. Another point is that this woman is only 31 years old. I have seen perhaps a dozen cases of Paget's disease, but none in a woman so young. It would

be interesting to know whether any of the other members of the society have observed Paget's disease of the nipple in a woman as young as this one.

Dr. Combes said that it is remarkable that there has been no change in the appearance of the lesion over a period of a year. One of the characteristic features of Paget's disease is that the process is slow. The cancer may remain within the ducts for five, ten or, in some cases, even fifteen or twenty years before breaking through and involving the breast. I recommended mastectomy to this patient, and she wanted to know whether a cure could be accomplished by using radium. I told her that I did not think radium would be of any service and that the only safe method was mastectomy. She asked whether the operation could be delayed until after Christmas. Shall I wait until after Christmas or do it now?

DR. FRED WISE: The operation should be performed immediately.

DR. HOWARD FOX: I agree that the operation should be performed at once.

CUTANEOUS HORN DEVELOPING ON A POSSIBLE MELANOMA. Presented by DR. HOWARD FOX.

This woman, aged 44, was presented before the society in March, 1930 (ARCH. DERMAT. & SYPH. **22**:766 [Oct.] 1930), with a diagnosis of melanoma of the alae nasi and the columella. She did not return for examination until one week ago, when she presented a cutaneous horn at the tip of the nose. There has not been any appreciable extension of the melanotic area since her first visit three and a half years ago. The duration of the cutaneous horn is six months.

She presents a typical cutaneous horn, ¼ inch (0.6 cm.) in length, on the tip of the nose, the lesion arising from the bluish-brown melanotic patch. There is no apparent enlargement of the glands in anatomic relation with the horn. Her general health is good.

DISCUSSION

DR. WALTER J. HIGHMAN: This patient was seen two or three years ago, before the horn developed. I fancy that if the lesion were a melanoma the patient would not be here today. I think that it is a pigmented basal cell epithelioma that has progressed to the exaggerated hyperkeratosis that the horn represents. The question now arises as to what to do about it. It is encouraging that it cannot be a highly malignant growth for the reason that it has existed for so long without doing any more damage than it has. Radical removal of the lesion, by whatever procedure seems to be the method of choice—high frequency sparking or monopolar desiccation—will probably give satisfactory results. However, in performing the operation a specimen should first be removed for biopsy, in order to ascertain the exact nature of the lesion, so that a more radical procedure can be followed if that is shown to be necessary by microscopic examination.

DR. E. F. TRAUB: Removing this lesion with the electric cutting current would yield material for biopsy and at the same time most safely remove the lesion. Sufficient border should be included to allow for complete removal, and if a weak coagulating current is used the cutting will not damage the specimen in a manner to interfere with microscopic study later.

DR. H. H. WHITEHOUSE: I am inclined to agree with Dr. Traub. If the lesion is a true melanoma and it is operated on, the result would be disastrous. If the biopsy specimen is taken first and examined microscopically, the extent of the operation necessary to remove it will be known.

DR. F. C. COMBES: The lesion does not look like a basal cell epithelioma. There is no doubt that there was a pigmented spot when the patient was presented before, and I think the diagnosis of melanoma was generally agreed on. I favor wide surgical removal of the lesion. A biopsy could be made first. If a subsequent operation is found necessary, it should be done. I should prefer that the lesion be removed by a plastic operation rather than by desiccation.

DR. J. FRANK FRASER: I agree with Dr. Highman. Pigmented basal cell epithelioma occurs much more frequently than is generally supposed. I have had

experience in cases similar to this, except for the cutaneous horn, in which a diagnosis of melanoma was made and the lesion proved to be merely a pigmented basal cell epithelioma. I do not believe that this lesion is a melanoma.

DR. GEORGE M. MACKEE: When this patient was presented before, the consensus was to leave the lesion alone and keep the patient under observation. I hesitate to hazard an opinion as to treatment until the diagnosis is settled. There is logic in the remarks of Dr. Highman and Dr. Fraser. In the first place, the fact that the lesion is bluish black by no means establishes the diagnosis of melanoma. It may be a pigmented basal cell epithelioma. Another point in support of that diagnosis is that rarely does a cutaneous horn develop on or in a melanoma. Cutaneous horns are not common in cases of basal cell epithelioma. The epitheliomas on which horns develop are usually of the squamous cell type. I am much in doubt about the diagnosis and recommend biopsy. So far as the danger of biopsy is concerned, authorities on cancer are now pretty well agreed that there is no danger in taking a biopsy specimen with a punch if no squeezing or massage is done. If the lesion is a melanoma, I favor Dr. Combes' suggestion, namely a radical or plastic operation.

DR. E. R. MALONEY: It seems to me that if one took a biopsy specimen from the growth one would remove the whole growth, unless a very small punch were used, which would not yield an adequate specimen.

DR. WALTER J. HIGHMAN: I did not make myself quite clear. I agree with what Dr. Combes and Dr. Traub said, with the proviso that at the time the patient is operated on, whatever the method used, a biopsy specimen should first be taken and immediately afterward the growth should be removed. Perhaps the biopsy specimen should be the entire growth, and after the results of microscopic examination are ascertained, a more radical operation should be undertaken. I do not think that one can decide that question clinically.

DR. GEORGE M. MACKEE: For removal of a biopsy specimen I favor a punch in preference to the electric cutting current unless a very wide excision is made; otherwise, the coagulating effect of the current will interfere seriously with the microscopic examination.

DR. HOWARD FOX: I appreciate the suggestions for handling this difficult case. I did not understand whether the suggestion to perform a biopsy meant that the specimen should be taken from the melanotic area or from the base of the horn after its removal.

DR. GEORGE M. MACKEE: The specimen should be taken from the base of the horn.

A CASE FOR DIAGNOSIS (ERYTHEMA INDURATUM? ERYTHEMA NODOSUM?). Presented by DR. HOWARD FOX.

N. S., aged 28, a waitress, came to the United States six years ago. Shortly after her arrival an eruption appeared on her legs. Her grandfather is said to have died of tuberculosis, and as a young girl she had a lump on the side of the neck which broke down and left a scar.

The lesions on the legs have appeared singly at varying intervals. At first they were slightly elevated, tender and reddish. None of them has ulcerated. Each lesion has lasted about two months and left a bluish stain.

She now presents a symmetrical eruption on the anterior and lateral aspects of the lower half of each leg. One lesion, which appeared recently, is slightly tender and elevated. The rest of the eruption consists of ill-defined bluish areas the size of a large coin; the color disappears on pressure. There is no evidence of previous ulceration. On the left side of the neck is an irregular scar suggestive of an old scrofuloderm. The patient is blond, well nourished and apparently in good general health.

DISCUSSION

DR. H. H. WHITEHOUSE: I do not know why the condition cannot be considered periphlebitis. The lesions run in lines, one beneath the other. Of the two

tentative diagnoses, erythema nodosum is more suitable than Bazin's disease, for the lesions have not broken down and they come and go.

DR. FRED WISE: My impression is that the condition is a type of Bazin's disease in which on account of the natural resistance of the patient the lesions do not break down.

DR. PAUL E. BECHET: The case is interesting. I much prefer the diagnosis of erythema induratum, but the condition is atypical. The lesions are identical with those in a case presented by me some years ago under the designation of periphlebitis nodularis necroticans—deep red, extremely painful, and unmovable subcutaneous nodules, located either on the anterior or on the posterior aspects of the legs and arranged in beadlike formation, which do not break down. As they undergo involution, the skin is drawn down, forming deep, dimple-like depressions, and the color changes to brownish yellow. This symptom complex has occurred frequently enough to fix attention to it. The condition may be an aberrant form of erythema induratum, but it is certainly not erythema nodosum.

DR. F. C. COMBES: I do not think the condition is erythema nodosum. I agree with Dr. Wise that it is an aberrant type of erythema induratum.

DR. J. FRANK FRASER: I am inclined to agree with Dr. Wise, but I suggest that a biopsy be made.

DR. GEORGE M. MACKEE: I have never favored broadening the concept of erythema nodosum. It is an acute evanescent disease so far as the individual lesions are concerned. If lesions are slow in evolution, persist for a considerable time, are slow in involution and leave scars, I do not think the condition is erythema nodosum. Therefore, this patient does not have erythema nodosum. The condition is probably Bazin's disease. Histologically it may represent so-called periphlebitis nodularis, or perhaps perivasculitis, because some of the nodules are not around the veins but around the arteries.

DR. WALTER J. HIGHMAN: I suppose that by raising the question of differential diagnosis what Dr. Fox means is: What label shall be given to this picture on which nearly all of the members agree? Obviously one is discussing the relative merits of regarding the condition as erythema nodosum or as erythema induratum of Bazin. It is a deep-seated infiltration, likely a granuloma. The skin presents a great many veins, arteries and lymphatics and the usual adnexa. Any infiltration is a "peri" something—periphlebitis or, as Dr. MacKee suggests, perivasculitis, or perifolliculitis. The synonym for erythema nodosum is dermatitis contusiformis. This patient does not look as if she had bruises. If that synonym is valid, the condition is more likely erythema induratum of Bazin.

Török, who originally described periphlebitis nodularis necroticans, two years later withdrew of his own volition both his designation and his views on the subject. If Török's original offerings mean anything, certainly the withdrawal of them means as much.

It is true that typical erythema induratum of Bazin is sluggish, and that erythema nodosum has all of the attributes that many of the speakers, particularly Dr. MacKee, mentioned. In the recent literature in England—I have forgotten the author's name—it is stated that erythema nodosum is also tuberculous. If this is true, one may as well give up having any concepts of dermatologic pictures. The one outstanding characteristic of erythema nodosum is that it is acute. It is associated frequently with cardiac disturbances related to rheumatism in the strict sense of the term. None of these conditions seems to apply here, although it is impossible to tell on inspection. Certainly there is too little breaking down of the lesions for erythema induratum. In that respect erythema nodosum seems more likely. There is some necrosis, however, with loss of substance, which rarely occurs in erythema nodosum. I do not know whether the histologic picture is going to throw as much light on the question as Dr. Fraser hopes, but it may throw some light on it. I think this is a borderline case, in which both diagnoses are possible from the standpoint of descriptive dermatology. From the course and

the possible relationship of the condition to known tuberculosis, the balance of evidence favors labeling it erythema induratum of Bazin.

DR. R. H. RULISON: Because of the long duration of the eruption and the sluggish character of the individual lesions, I am inclined to think the process is tuberculous. It probably belongs to the erythema induratum group.

DR. E. R. MALONEY: I agree with Dr. Wise's interpretation; in my opinion the condition is atypical erythema induratum.

DR. HOWARD FOX: Although I strongly incline to the diagnosis of erythema induratum, the case presents some features suggestive of erythema nodosum. One difficulty is that both of these conditions may occur on the legs of young women and both may be due to tuberculosis. The fact that there has been no ulceration for six years would be unusual in Bazin's disease. The long duration, as Dr. MacKee has said, is not typical of erythema nodosum, which usually runs its course in a few weeks, or two and a half months at the most. The clinical picture of erythema nodosum is unusual, however, in that it may have numerous causes, including syphilis, tuberculosis, certain drugs, fungi and various other organisms, such as streptococci, Bacillus crassus and the organism of lymphogranuloma inguinale. A case was recently reported by Wohlstein (abstr., ARCH. DERMAT. & SYPH. **26**:515 [Sept.] 1932) as a "stationary form of erythema nodosum." A woman who had tuberculosis and rheumatic symptoms suffered for five years from a painful nodular eruption on the legs and in other regions. The author considered the condition to be erythema nodosum of the persistent type described by Pick.

A CASE FOR DIAGNOSIS (DERMATOPHYTOSIS OF THE PENIS?). Presented by DR. HOWARD FOX.

E. H., aged 33, a business man, has suffered from scaly patches on the fingers for six years. The present eruption has existed for eighteen months. The lesions are disseminated and sparse and consist of a few scaly patches on the trunk and extremities, vesicles on the soles and some maceration of the toe webs. On the glans penis and the prepuce there is a diffuse reddish and shiny infiltration with spots of brownish pigmentation. There is no scaling or abrasion of the skin. The trichophyton test was markedly positive. Histologic examination by Dr. T. J. Riordan of tissue from the prepuce showed a chronic inflammatory process. Lichen planus was excluded. The eruption on the penis has been treated by roentgen rays with unsatisfactory results.

DISCUSSION

DR. HOWARD FOX: There is a question whether the diffuse maculopapular infiltration of the glans and the surrounding part of the prepuce represents part of the dermatomycosis on the hands and the other parts of the body.

DR. FRED WISE: I suggest the diagnosis of kraurosis of the glans penis and recommend another biopsy.

DR. HOWARD FOX: The histologic examination showed simple inflammation.

DR. WALTER J. HIGHMAN: Does Dr. Wise mean kraurosis in the sense of scleroderma?

DR. FRED WISE: I mean kraurosis of the glans penis, the analog of kraurosis of the vulva.

DR. WALTER J. HIGHMAN: Kraurosis vulvae is an atrophoderma regarded by many gynecologists as related to scleroderma. This condition does not look like anything of that sort.

LICHEN PLANUS OF THE MOUTH. Presented by DR. E. F. TRAUB.

Mr. F. M., aged 57, born in the United States, presents extensive lichen planus involving the greater part of the oral cavity. The tongue and the mucosa of the cheek show a network of interlacing annular lesions involving the greater part

of the surface. There is no eruption on the body at the present time, but the patient gives a history of having had a generalized eruption eighteen years ago, diagnosed as lichen planus, and a vague eruption eight years before, which was not diagnosed. The only confirmatory evidence at the present time is a single annular lesion on the glans penis.

CHEILITIS EXFOLIATIVA. Presented by DR. E. F. TRAUB.

Mr. H. M., a student, aged 20, born in the United States, presents an eruption on both the upper and the lower lip of four years' duration. The patient brought with him a paper full of thick, tough scales which are constantly shed from the lips. There is no tendency to cracking or fissuring. He has been treated with many kinds of ointments and has received eight treatments with one-fourth skin erythema dose of roentgen radiation and four or five treatments with ultraviolet radiation. A set of food tests was performed, which showed him to be sensitive to strawberries and pork (neither of which he ate). He is presented for suggestions as to treatment.

DISCUSSION

DR. HOWARD FOX: I have seen some cases in which the eruption cleared permanently after the use of roentgen rays and others in which roentgen treatment did no good. In one case the lesions cleared under radium therapy.

DR. E. F. TRAUB: In the absence of any suggestions, may I ask the members of the society whether they approve of my idea as to therapy? I wish to propose that a small dose of radium with very light filtration be applied to both lips only long enough to provoke a slight reaction.

DR. GEORGE M. MACKEE: Roentgen rays and radium sometimes are successful and sometimes are not. To answer the question specifically, if an appreciable time has elapsed since roentgen radiation has been used, several months at least, I think there is a good chance of success with radium treatment, using the beta rays. I suggest contact treatment, with a 0.3 mm. aluminum filter, for twenty minutes. This would probably provoke a mild erythema, but with the soft beta rays the reaction would not be dangerous.

DERMATITIS EXFOLIATIVA. Presented by DR. E. F. TRAUB.

Mr. A. S., aged 30, born in New York, presents a generalized eruption of about six months' duration. He has had an eruption on his hands and feet since August, 1932. A mercurial ointment was applied, and the question was raised as to whether or not he might have mercurial poisoning. He was admitted to Bellevue Hospital, where he remained for two weeks, and a diagnosis of tinea and dermatitis was made. He later went to the Skin and Cancer Hospital, where he remained for six weeks, during which time the eruption practically cleared. Shortly after his discharge from the hospital, however, the eruption gradually began to reappear and has spread until now it is almost universal. The patient is epileptic and until recently took rather large doses of phenobarbital daily. This has been discontinued for a time in the hope of ascertaining whether or not the ingestion of the drug has any bearing on the eruption. Blood counts, determinations of blood chemistry and all other laboratory tests made gave negative results.

DISCUSSION

DR. E. F. TRAUB: The question of etiology involves three factors. First, the patient states that he applied some mercurial ointment to his body for a minor cutaneous condition. Secondly, he apparently had a definite fungous infection of the hands and feet, with a secondary eruption over the body. Lastly, the question of ingestion of drugs must be considered, as the patient, who is epileptic, is in the habit of taking fairly large doses of phenobarbital every day.

DR. WALTER J. HIGHMAN: I have had no experience with the injection of dextrose, but I should like to venture this suggestion. This condition is what used to be called the idiopathic type of dermatitis exfoliativa, and it probably has no relation to any of the factors mentioned. The man sat here shivering. He presents the clinical picture of the Wilson-Brocq type of dermatitis exfoliativa. If he is kept comfortable and the eruption is left alone for six months or a year, the chances are that he will get over it. He should be kept warm and the skin greased. He is unfit to work as he is.

DR. E. F. TRAUB: The most remarkable thing about this case is the fact that the patient is not very uncomfortable, though at times the itching is rather intense. His wife is of the opinion that when the patient does not scratch, which he does particularly at night, the eruption heals almost spontaneously.

DR. R. H. RULISON: Has this patient been kept in a continuous bath for any length of time?

DR. E. F. TRAUB: No.

LYMPHANGIOMA CIRCUMSCRIPTUM. Presented by DR. PAUL E. BECHET.

S. A., a woman, aged 18, states that the lesions have been present for approximately sixteen years. On the front of the neck, almost on the median line and extending to the chin, are groups of vesicles arranged in patches of irregular contour. Some of the vesicles are opalescent and yellowish. Others are claret red and filled with blood. The lesion apparently is of a mixed type, some parts being lymphangiomatous and other parts hemangiomatous.

This type of lesion is frequently refractory to treatment, and suggestions as to therapy will be gratefully received.

DISCUSSION

DR. WALTER J. HIGHMAN: I do not think the condition is simple lymphangioma circumscriptum. There are plenty of blood vessels in the lesions, and corroborative evidence is found in the lesions on the chin. I think it is a vascular nevus.

DR. FRED WISE: I agree with Dr. Highman.

DR. GEORGE M. MACKEE: I agree with Dr. Highman, if I have correctly understood his remarks, that this is a hemangiolymphangioma.

DR. H. H. WHITEHOUSE: I agree with Dr. MacKee's diagnosis. In my experience carbon dioxide snow gives good results in removing these lesions.

DR. PAUL E. BECHET: I should appreciate suggestions as to therapy. The lesion is in a prominent location, and whatever is done must give a satisfactory cosmetic result. I think Dr. Whitehouse's suggestion is valuable because the cosmetic results after carbon dioxide snow are very good, but does the effect go deep enough? Radium, I know, has given some good results.

DR. H. H. WHITEHOUSE. The application of firm pressure for about fifty seconds and repetition of the process after the frozen area has thawed out generally remove deep-seated lesions of this type.

DR. HOWARD FOX: Dr. Trible, as I remember, published a report of a fine result from the use of radium.

LUPUS ERYTHEMATOSUS DISSEMINATUS. Presented by DR. E. R. MALONEY.

A. S., a white woman, aged 40, came to Bellevue Hospital on May 16, 1933, with an eruption on the face, the lobe of the left ear and the chest. The eruption on the face and ear was made up of somewhat infiltrated, erythematous patches with fine, adherent scales, which had developed two months previously. The eruption on the chest, similar in character, had been present for two weeks. She had felt rather sick during this time and had had a temperature between 99 and

102 F., the temperature being taken several times a day. On her first admission to the hospital she was given an injection of 5 mg. of gold and sodium thiosulphate. One week later she was given an injection of 10 mg., after which the eruption became much worse. This treatment was discontinued, and calamine and zinc oxide lotion was applied. At the end of a month the patches had coalesced, there was marked edema under both eyes and pigmentation had developed, mostly at the edges of the eruption. During the next two months the patient was given several injections of sodium thiosulphate and calcium chloride without much improvement of the eruption.

Roentgen examination of the lungs showed interstitial changes at the roots and in the lower parts. Roentgen examination of the sinuses showed hypertrophy of the mucous membrane of the maxillary sinuses; the other sinuses were normal. The nose and throat were normal. Examination of the larynx revealed erythematous lesions similar to those on the face. A blood count in June, 1933, showed 4,250,000 red cells, 70 per cent hemoglobin and 4,250 white cells, with 35 per cent polymorphonuclears and 63 per cent lymphocytes. A blood count on November 23, showed 3,730,000 red cells, 71 per cent hemoglobin and 5,500 white blood cells, with 34 per cent polymorphonuclears, 62 per cent lymphocytes and 4 per cent eosinophils. The urine was normal except for low specific gravity (1.005). The tuberculin and the Wassermann test were negative. The sedimentation time of the blood was fifty-four minutes (Linzenmeier's method). The report on the biopsy was that the tissue showed lupus erythematosus.

ATROPHODERMA AND KELOIDAL SCARS FOLLOWING ERYTHEMA MULTIFORME. Presented by DR. E. R. MALONEY.

B. G., a white woman, aged 26, born in the United States, prsents on the chest, between and above the breasts, multiple linear, raised, white keloidal scars and various-sized patches of parchment-like, bluish-white, atrophic skin between and around the linear lesions. In the same location are a few small areas of telangiectasia. There are similar lesions on the back, hands and feet. On the face there are a few areas of barely perceptible thinning of the skin, with brown mottled pigment. The patient states that the condition began in 1929 with the development of many small, red, intensely itchy spots on the back, which gradually extended to other parts. These soon became raised, resembling mosquito bites. Two weeks after the onset large bullae developed on the spots. The bullae ruptured, and crusts and scabs formed. She was seen at that time by Dr. Eichenlaub, in Washington, who made a diagnosis of erythema multiforme. Three months after the disappearance of the crusts, the keloidal and atrophic lesions now present began to develop.

While under treatment in Washington, the patient was given two roentgen treatments (dose unknown) on the chest by Dr. Eichenlaub in an endeavor to flatten some of the keloids. She came to St. Vincent's Hospital six months ago, since which time she has been taking thyroid, ¼ grain (0.015 Gm.), and ovarian extract, 5 grains (0.32 Gm.), with considerable reduction in the size of the keloids.

DISCUSSION

DR. WALTER J. HIGHMAN: Erythema multiforme seems a peculiar preceding eruption.

DR. FRED WISE: I offer this merely as a tentative suggestion: I do not think the condition is an ordinary keloidal condition with scarring. There is some other fundamental change, possibly amyloid or mucinoid degeneration. A biopsy certainly should be done on an area in which this degeneration may present itself. One should try to determine what causes these peculiar changes in the skin.

DR. WALTER J. HIGHMAN: Are the lesions only on parts of the body accessible to the hands?

DR. E. R. MALONEY: There are some lesions on the back, but most of them are on the chest.

DR. WALTER J. HIGHMAN: I believe that the patient fooled Dr. Eichenlaub and that the lesions were self-inflicted.

DR. HOWARD FOX: The facts that some of the lesions are on parts of the body which are inaccessible to the hands and that they are symmetrical are strong evidence against a self-inflicted eruption.

DR. FRED WISE: Does this case not resemble one described by Gilchrist and Ketron about twenty years ago?

INTRA-EPIDERMAL EPITHELIOMA, BASAL CELL TYPE (JADASSOHN)? Presented by DR. F. C. COMBES.

C. L., a white man, aged 47, a patient in the New York University Medical College, presents on the trunk, the upper parts of the arms and the thighs about a dozen flat, erythematous lesions in various stages of evolution. They vary from 1 to 3 cm. in diameter. The more recent lesions are merely well defined, non-infiltrated erythematous macules surmounted by a loosely adherent laminated scale. The older lesions show atrophy and telangiectasia, and one has a distinct, thread-like rolled border. There are some pitting and pigmentation on the glans penis as a result of previous lesions. The lesions have been appearing and disappearing spontaneously for about twenty years. There is no history of the ingestion of arsenic. The blood count, blood chemistry and urine are normal. The Wassermann reaction is negative.

The histologic diagnosis is intra-epidermal basal cell epithelioma.

DISCUSSION

DR. J. FRANK FRASER: I do not agree with the diagnosis of intra-epidermal basal cell epithelioma. There are masses of mildly anaplastic epithelial cells which are pushing their way into the corium, and perhaps if serial sections were made one could find some of these separated from the epidermis. My diagnosis is multiple superficial basal cell epithelioma of hair matrix origin.

DR. GEORGE M. MACKEE: I agree emphatically with Dr. Fraser.

DR. WALTER J. HIGHMAN: I agree with Dr. Fraser. I wish dermatologists would not enslave themselves to meaningless foreign concepts and the terms describing them which pervade American literature.

DR. HOWARD FOX: I agree with Dr. Fraser.

DR. FRED WISE: I agree with Dr. Fraser.

DR. F. C. COMBES: I agree with the diagnosis that all the discussers have made. I do not pose as a histopathologist, but clinically there is no difference that I can see between the superficial benign basal cell epithelioma and the intra-epidermal epithelioma which Jadassohn and Borst have described. I have examined the slides again here, and I can see the differences pointed out between the intra-epidermal epithelioma of Jadassohn and Borst and the ordinary superficial "benign" epithelioma which Dr. Wise so ably described in an article several years ago.

DR. GEORGE M. MACKEE: I should like to protest against the use of the term "multiple benign epithelioma" in connection with this case. The lesions are multiple, but they are not necessarily benign. If allowed sufficient time to act, they may affect the deeper tissues, and I have known several instances in which such lesions caused death from hemorrhage or septicemia by involving the joints or the deeper tissues. Moreover, this term confuses this condition with the well known entities, benign cystic epithelioma, tricho-epithelioma, syringoma, etc. The eruption in this case represents what is known as multiple basal cell epithelioma, or multiple basal cell epitheliomatosis, and must be differentiated from Bower's epithelioma, which is seldom multiple.

DR. F. C. COMBES: I agree with what Dr. MacKee has said. I also object to the inclusion of the term "multiple," because the lesions may be single.

A Case for Diagnosis (Parapsoriasis?). Presented by Dr. Paul E. Bechet.

H. A., a man, aged 49, states that his dermatosis has been present for five years and that it has not itched or inconvenienced him. He presents a puzzling variety of lesions. On the legs are elevated, reddened ridges with considerable ichthyosiform scaling; on the thighs are reticulated, lacelike lines with some scaling, and on the trunk there are large, slightly scaly, pinkish to yellowish-red patches with fine scaling, typical of the *en plaque* type of parapsoriasis.

DISCUSSION

Dr. Walter J. Highman: What is the patient's occupation? It may have some bearing on the lesions on the legs. The patient has parapsoriasis. I do not know whether the lesions on the legs are ordinary dermatitis due to some habit or occupation of the patient or whether they are a manifestation of parapsoriasis.

Dr. Paul E. Bechet: Dr. Highman is right. The lesions on the legs and thighs do not resemble parapsoriasis. The lesions on the trunk are typical of parapsoriasis of the *en plaque* variety. I presented the patient for suggestions as to diagnosis because of the lesions on the legs and thighs. The question also came up as to whether there is not a certain amount of ichthyosis, possibly of the erythrodermia ichthyosiforme type. The lesions on the lower extremities resemble that condition much more than they do parapsoriasis.

Herpes Zoster and Herpes Simplex Recurrens. Reported by Dr. Howard Fox.

W. K., aged 57, a business man, recently applied for treatment of typical zoster on the left side of the chest. It was accompanied by considerable pain for one week and ran its course in three weeks. He had never had a similar eruption. He had never had varicella, and there had not been any recent exposure to this disease.

For the past fifteen years he has had recurring attacks of a herpetic eruption at average intervals of five weeks. He describes the lesions as small groups of blisters which were accompanied by mild burning and lasted from five to ten days. They appeared in two distinct regions, the pubes and the penis and a palm-sized area on the right hip. The lesions have recurred within a small area, though not necessarily on the identical sites. When first seen he presented one of these lesions on the pubes, in process of involution.

Books Received

HANDBUCH DER HAUT- UND GESCHLECHTSKRANKHEITEN: II. ERKRANKUNGEN DER HAUT DURCH PROTOZOEN FILTRIERBARES VIRUS, BAKTERIEN. IMMUNBIOLOGIE. By W. Hilgers, W. Jadassohn and others. Edited by J. Jadassohn. Price, 108 marks; bound, 116 marks. Pp. 507. Berlin, Julius Springer, 1932.

LES TRAITEMENTS DE LA SYPHILIS. By R. J. Weossenbach and G. Basch. Price, 18 francs. Pp. 147. Paris: Gaston Doin & Cie, 1934.

TUBERCULOSE CUTANÉE ET TUBERCULIDES. By Joseph Nicolas and Jean Gate. Price, 80 francs. Pp. 481, with 74 illustrations. Paris: Gaston Doin & Cie, 1934.

LA SYPHILIS DU CERVELET, ET DES CONNEXIONS CÉRÉBELLEUSES. By J. Thiers. Price, 20 francs. Pp. 102, with 10 illustrations. Paris: Gaston Doin & Cie, 1934.

THE 1933 YEAR BOOK OF DERMATOLOGY AND SYPHILOLOGY. Edited by Fred Wise and Marion B. Sulzberger. Price, $2.25. Pp. 458. Chicago: The Year Book Publishers.

LA SYPHILIS EXPÉRIMENTALE: ETUDE CRITIQUE ET NOUVELLES RECHERCHES. P. Gastinel and R. Pulvenis. Price, 45 francs. Pp. 244, with 23 illustrations. Paris: Masson & Cie, 1934.

UNE NOUVELLE SYPHILIS NERVEUSE, SES FORMES CLINIQUEMENT INAPPARENTES. Paul Ravaut. Price, 45 francs. Pp. 200, with 3 illustrations. Paris: Masson & Cie, 1934.

Directory of Dermatologic Societies *

FOREIGN

British Association of Dermatology and Syphilology (Canadian Branch)

Alberic Marin, President, Drummond Medical Bldg., Montreal.
Antonio Sabetta, Secretary-Treasurer, 3435 St. Denis St., Montreal.
Place: Hamilton, Ontario. Time: 1934.

Royal Society of Medicine, Section of Dermatology

Henry MacCormac, President, 23, Wimpole St., W. 1, London.
W. N. Goldsmith, Secretary, 6, Upper Wimpole St., W. 1, London.

NATIONAL DERMATOLOGIC SOCIETIES

American Medical Association, Scientific Assembly, Section on Dermatology and Syphilology

C. Guy Lane, Chairman, 416 Marlboro St., Boston.
Harry R. Foerster, Secretary, 208 E. Wisconsin Ave., Milwaukee.
Place: Cleveland. Time: June 11-15, 1934.

American Dermatological Association

Harold N. Cole, President, 1422 Euclid Ave., Cleveland.
W. H. Guy, Secretary, 500 Penn Ave., Pittsburgh.
Place: New York. Time: June 7-9, 1934.

SECTIONAL DERMATOLOGIC SOCIETIES

Baltimore-Washington Dermatological Society

Harry F. Anderson, President, 1610, 20th St. N.W., Washington, D. C.
Joseph V. Kennedy, Secretary, 1835 Eye St., Washington, D. C.

Central States Dermatological Association

Joseph Brumberg, President, 528 Delaware Ave., Buffalo.
William F. Hoover, Secretary, 333 Linwood Ave., Buffalo.
Place: Buffalo. Time: 1934.

Iowa and Western Illinois Dermatological Association

J. C. Kessler, President, University Hospital, Iowa City.
Robert E. Jameson, Secretary, 1014 First National Bank Bldg., Davenport, Iowa.

New England Dermatological Society

Rudolph Jacoby, President, 270 Commonwealth Ave., Boston.
J. Harper Blaisdell, Secretary, 5 Bay State Road, Boston.

Southern Medical Association, Section on Dermatology and Syphilology

Thomas W. Murrell, Chairman, 17 E. Grace St., Richmond, Va.
C. C. Dennie, Secretary, Professional Bldg., Kansas City, Mo.
Place: San Antonio, Texas. Time: November, 1934.

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* Secretaries of dermatologic societies are requested to furnish the information necessary for the editor to make this list complete and to keep it up to date.

STATE DERMATOLOGIC SOCIETIES

Florida Society of Dermatology and Syphilology

Chairman for each meeting is elected from city in which meeting is held.
Elmo D. French, Secretary, 602 Huntington Bldg., Miami.
Place: Jacksonville. Time: July 2, 1934.

Louisiana Dermatological Society

J. A. Devron, President, 150 Baronne St., New Orleans.
M. T. Van Studdiford, Secretary-Treasurer, 912 Pere Marquette Bldg., New Orleans.

Medical Society of the State of New York, Section on Dermatology and Syphilology

George M. Fisher, Chairman, 264 Genesee St., Utica.
Frank Combes, Secretary, 80 W. 40th St., New York.

Medical Society of the State of Pennsylvania Section on Dermatology

Herbert J. Smith, President, 3303 N. 17th St., Philadelphia.
Robert L. Gilman, Secretary, 1930 Chestnut St., Philadelphia.

Michigan State Medical Society, Section on Dermatology and Syphilology

Robert C. Jamieson, Chairman, 1551 Woodward Ave., Detroit.
A. R. Woodburne, Secretary, Grand Rapids Clinic, Grand Rapids.
Place: Battle Creek. Time: September, 1934.

Minnesota Dermatological Society

D. D. Turnacliff, President, 407 Medical Arts Bldg., Minneapolis.
L. H. Winer, Secretary, 522 Medical Arts Bldg., Minneapolis.
Time: First Wednesday in October, December, February and April.

Oklahoma Dermatological Association

W. A. Showman, President, 108 W. 6th St., Tulsa.
C. L. Brundage, Secretary, 505 Osler Bldg., Oklahoma City.

Texas Dermatological Society

Everett C. Fox, President, 1719 Pacific Ave., Dallas.
Everett R. Seale, Secretary, 1215 Walker Ave., Houston.

LOCAL DERMATOLOGIC SOCIETIES

Atlanta Dermatological Society

Francis G. Jones, President, 384 Peachtree St., Atlanta, Ga.
Charles A. Wilkins, Secretary, Medical Arts Bldg., Atlanta, Ga.

Bronx Dermatological Society

Samuel Feldman, Chairman, 1955 Grand Concourse, New York.
Henry Silver, Secretary, 290 West End Ave., New York.

Brooklyn Dermatological Society

Arthur Persky, President, 1750 Ocean Parkway, Brooklyn.
George F. Price, Secretary, 884 Lincoln Place, Brooklyn.
Time: Third Monday of each month except June, July, August and September.

Buffalo-Rochester Dermatological Society

Earl D. Osborne, President, 471 Delaware Ave., Buffalo.
Richard L. Saunders, Secretary, 33 Linwood Ave., Buffalo.

Chicago Dermatological Society

James H. Mitchell, President, 25 E. Washington St., Chicago.
Max S. Wien, Secretary, 104 S. Michigan Ave., Chicago.

Cincinnati Dermatological Society

Harry L. Claassen, President, Provident Bank Bldg., Cincinnati.
Raymond G. Senour, Secretary-Treasurer, 19 W. 7th St., Cincinnati.

Cleveland Dermatological Society

R. E. Barney, President, 1021 Prospect Ave., Cleveland.
E. W. Netherton, Secretary, 2020 E. 93d St., Cleveland.

Detroit Dermatological Society

H. L. Keim, President, 10 Witherell St., Detroit.
William G. Saunders, Secretary-Treasurer, 9203 Grand River Ave., Detroit.

Los Angeles Dermatological Society

Stanley O. Chambers, Chairman, 727 W. 7th St., Los Angeles.
Nelson P. Anderson, Secretary, 2007 Wilshire Blvd., Los Angeles.

Manhattan Dermatologic Society

Howard Fox, Chairman, 140 E. 54th St., New York.
Mihran B. Parounagian, Secretary, 126 E. 39th St., New York.

Montreal Dermatological Society

J. F. Burgess, President, Drummond Medical Bldg., Montreal, Canada.
B. Usher, Secretary-Treasurer, 1538 Sherbrooke St., W., Montreal, Canada.

New York Academy of Medicine, Section of Dermatology and Syphilis

Ray H. Rulison, Chairman, 145 E. 54th St., New York.
E. William Abramowitz, Secretary, 853, 7th Ave., New York.

New York Dermatological Society

Edward R. Maloney, President, 853 7th Ave., New York.
R. H. Rulison, Secretary, 145 E. 54th St., New York.

Omaha Dermatological Society

J. W. Hellwig, Chairman, 1319 Farnam St., Omaha.
Donald J. Wilson, Secretary, 1216 Medical Arts Bldg., Omaha.

Philadelphia Dermatological Society

Jacques P. Guequierre, Chairman, 1930 Chestnut St., Philadelphia.
Robert L. Gilman, Secretary, 1930 Chestnut St., Philadelphia.

Pittsburgh Dermatological Society

Frederick Amshel, Chairman, 3401 5th Ave., Pittsburgh.
Bernhard Goldmann, Secretary, Jenkins's Arcade, Pittsburgh.

St. Louis Dermatological Society

Richard S. Weiss, President, 3720 Washington Blvd., St. Louis.
M. F. Engman, Jr., Secretary-Treasurer, 3720 Washington Blvd., St. Louis.

San Francisco Dermatological Society

H. J. Templeton, President, 3115 Webster St., Oakland, Calif.
John M. Graves, Secretary, 909 Hyde St., San Francisco.

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